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EXTRA.

# AMERICAN VETERINARY REVIEW,

OCTOBER, 1890.

## United States Veterinary Medical Association.

### EDITORIAL.

On Sunday morning, September 14th, 1890, we left New York, accompanied by the contingent of veterinarian brethren who have hitherto constituted the nucleus of the United States Veterinary Medical Association—gathered mostly from the East—with our faces turned westward. Our objective point was Chicago, and our purpose was to attend the twenty-seventh anniversary meeting of the Association, which had been appointed to be held in that city. Making something of a detour from the more direct route, for the purpose of a brief stay in each of our sister cities of Philadelphia, Baltimore and Washington, and augmenting our force in the last named city by a number of new recruits, we sped onward until we reached Cincinnati. Here a longer halt was ordered, and deviating from our direct road, we made a visit to Lexington, Ky., where, in pursuance of arrangements made by Dr. Kidd, we were gratified by a visit to two of the best breeding establishments of that vicinity. Returning to Cincinnati, we resumed our journey in our special car, and after a *very gay, if not*

*a very restful night*, reached the great city where for the two following days we were to attend the meeting which was to consummate the consolidation of the United States Veterinary Medical Association, or, to quote the very expressive words of Dr. Williams, "to witness the birthday of the TRUE National Association of the United States."

The meeting, which was hurriedly reported in our last number, was characterized by a pervading harmony, and a general and genuine feeling of friendliness throughout, with practically, AGREEMENT AND CO-OPERATION for its motto and pass-word. The discussions of the scientific questions which were in order were instructive and able, and the serious work of the occasion was faithfully attended to, though intermixed now and then with social relaxation and intervals of rest, and pleasant visits and drives through and about the great metropolis of the West, the whole being, at length, fitly crowned by one of the nicest entertainments ever enjoyed by the members of the profession and of the Association. And then came the final "*Au revoir*" with the inevitable hour of separation. The meeting was over; long distances separated us from our homes; an editor's duty to his friends and readers began to urge itself upon us with a voice which could not be silenced. While in Chicago we had mentally formulated a plan of arrangement for our work, or at least thought we had done so, and flattered ourselves that our ideas required nothing more than the labor of putting them in type against our regular time to put the REVIEW to press. But where is the editor that can depend upon making all the joints of his time fit together in the execution of the purposes he has formed?

Lots of papers were read, and a large amount of labor was performed at the meeting, and the reports of the committees being lengthy, and the stenographers more or less embarrassed by technicalities with which they were unfamiliar, the reporters' work was rather tardily performed, and much time was consequently consumed in necessary corrections and emendations, the material for our work thus failing to come to time, causing, altogether, not a little anxiety and embarrassment on our part; and as if there were not enough in all these obstacle to worry our



patience, traveling misfortunes must be added to the list, our worthy Secretary having missed his "impedimenta," to wit, his bag and baggage, containing a large number of Association documents, which, however, turned up at last in New York instead of Philadelphia, their proper destination, and then appearing in a most dilapidated condition, the valise having been broken open and the papers more or less roughly handled or mixed confusedly together. But notwithstanding all, some record of the meeting must needs be forthcoming, though under the circumstances it could be little more than the simplest notice. But the meeting had been of too interesting and important a character to be thus cavalierly treated, and as the time had long passed after our regular day to go to press, the alternative presented itself of missing the date of our regular publication, or of neglecting our obligations to the friends and supporters of the REVIEW. We have, therefore, decided to do that which we thought would fulfill all our obligations. Our October number appeared upon the *regular* day of publication—and by the way, it was a good number—and to-day we offer to our friends, to our veterinary *confrères*, and to our colleagues in the Association, this *extra number* of the AMERICAN VETERINARY REVIEW, with as thorough and complete a *compte rendu* of the meeting as our position has enabled us to obtain. If our subscribers have waited a few days for this, they have nevertheless not lost their *regular monthly visitor*. We trust that our apology for the tardiness of the appearance of the report will be satisfactory to our friends.

TWENTY-SEVENTH ANNUAL MEETING  
OF THE  
UNITED STATES VETERINARY MEDICAL ASSOCIATION.

AUDITORIUM RECITAL HALL, CHICAGO,

Sept. 16th and 17th, 1890.

FIRST DAY.

The Comitia Minora spent the morning session of September 16th in an executive meeting.

The second session was called to order at 3 o'clock P.M., by President Michener.

The following named members responded to roll-call by the Secretary, Dr. W. Horace Hoskins.

Drs. Adair, Atkinson, Barrow, Butler, T. S., Clement, Crowley, Crego, Dougherty, Wm., Evers, Faust, Faville, Hoskins, Howe, Huidekoper, Lemay, Liautard, Lyford, McLean, R. A., Marshall, Meyer, J. C., Sr., Meyer, J. C., Jr., Michener, Paquin, Rayner, Jas. B., Rayner, Thos. B., Robertson, Jas. L., Salmon, Trumbower, Turner, Weber, Winchester and Zuill.

Those not members of the Association but present were: Drs. Rectennold, Schrieber and Folker, of Penn.; Griffin, of the Indian Territory; Thompson, of Indiana; W. B. Wallace, of Ohio; Armstrong, Williams, A. H. Baker, S. S. Baker, Ryan, Sayre, C. E. Hughes, Withers, Walker, Casewell, Hollingsworth, J. A. Borette, L. A. Merrilat, A. C. Merrilat, Story, Campbell, Mosher, Stringer, Streets, of Illinois; S. Stewart, Kennedy, Edwards, of Iowa; W. J. Stewart, Prof. Periam, of Ill.; S. C. Whitney, of Mich.; C. A. Carey, of South Dakota; Kidd, of Lexington, Ky.; T. E. White, A. Ronif, Jno. S. Myers, H. B. Piatt, of Missouri; J. M. Phillips, of Kansas; Wm. Shaw, Otto Faust, of Ohio; J. Hawkins and S. Brenton, of Mich.; Olaf Schwartzkopf, of Minn.; Roberts, E. M. Barnes, Watson, of Wis.; D. W. Menhennitt, W. J. Stewart, Mich.; T. Wigglesworth, Wis.; J. S. Butler,

Daniels, of Ohio; J. C. Whitney, Hillsdale, Mich.; J. M. Currence, Sayre, Roe, of Ind.; J. H. Hope, Ill.; Prof. Periam, of Chicago Veterinary College; Albert Dean, of Mo.

The President introduced Dr. W. L. Williams, of Bloomington, Ill., who delivered an address of welcome and spoke as follows:

#### ADDRESS OF WELCOME BY DR. WILLIAMS.

When we invited and urged you to convene this meeting here, our message bore an inferential promise of a hearty welcome, which it now becomes our pleasant duty to endeavor to fulfill.

In a formal invitation it is scarcely possible to convey to a desired guest the full measure of the welcome which awaits him, nor to advise him wholly of the many reasons why a visit would be gratefully enjoyed, and so social custom has long decreed that an invitation be brief, and that many of the essential reasons for bidding the guest come, and for according a hearty greeting, should remain unexpressed until he has arrived at the house of the host, who, surrounded by the inspiring influences of home, may all the more fitly give voice to his thoughts.

So ere you enter upon the duties for which you have come in our midst, we would invite you to pause and briefly consider a part of the reasons why we extend to you a most hearty welcome, with the hope that they may gladden and cheer your labors.

Were it my duty to welcome you specially to Illinois, the State of my birth, the scene of my efforts as a student and veterinarian, there would certainly be no lack of suitable reasons, with our vast live stock interests, the first in value of any State in the Union, the long list of serious contagious diseases which exist or have existed in our midst, their economic and sanitary importance, and the resulting large body of young veterinarians, greater in number than in any other Western State, who have every reason for heartily greeting you here for the good which may come to ourselves by commingling with you.

It is not, however, to Illinois, but to the West and Northwest that we bid you welcome; to the live stock producing area of the nation, and one of the most important live stock regions of the world. You now visit for the first time the source of live stock supplies not alone to the nation, but to no small extent to several foreign countries.

Our meat producing animals are rarely equalled, never surpassed in any land for quality and richness, and our quantity is sufficiently great so that, after supplying the wants of the nation, we still have an enormous supply of meat and dairy products for exportation. We breed and supply to home and foreign markets a vast number of horses, among which are the speediest pacers and trotters, and as fleet thoroughbreds, and as powerful draft horses, as are to be found in the world.

In building this comparatively recent live stock interest, every valued breed of every land has been drawn upon for its choicest individuals, and yet

we have, numbers and value considered, the healthiest live stock population in the world.

This being the fountain head from which the nation's live stock supplies are to be drawn, the freedom of this area from serious diseases has an inestimable value from a monetary and sanitary standpoint, and directly influences the health and wealth of the nation.

To no one can these questions prove of more direct interest than to our profession, and especially to your society which, as now constituted, is largely made up of veterinarians representing that part of the country which consumes a large part of our live stock products.

There must be a strong reciprocal interest between the older and better organized profession of the East, and the younger and now numerically equal body of Western veterinarians. Although the growth of our profession throughout the country has been rapid, almost beyond belief, you are now for the first time in the midst of the most phenomenal part of the entire body which, practically the creation of the past decade, has within ten years increased by nearly or quite 1500 per cent., a growth heretofore unequalled in any profession in any land at any age.

This young, rapidly grown, and to some extent poorly equipped veterinary profession must in the future be to a great extent the guardian of the health and worth of this vast animal population, among which widespread and fatal disease would mean financial ruin to those engaged in breeding and rearing live stock, would cripple one of our important sources of national wealth, and through those diseases communicable from animal to man, or those which render the flesh of affected animals unfit for human food, would jeopardize the health of the whole people.

Recently we were astonished and alarmed to find that a serious outbreak of pleuro-pneumonia existed in this city, from which great numbers of live cattle are shipped not only to all parts of the nation, but to many foreign countries. As this insidious and destructive disease could not be tolerated here, the State at once took measures to suppress and eradicate it, and the nation in due regard to its interests relaxed for a time its work with other infected areas of importance, and heartily joined the State in the prompt and now apparently effectual eradication of the disease at this peculiarly vulnerable point.

So when, in 1887, equine syphilis was reported as existing to a serious extent for the first time in any English speaking country, in one of our principal horse-breeding centers from which we annually export large numbers of valuable breeding animals to every part of the nation, there was a demand and necessity that it be controlled and extirpated, and as a result it has not been seen or heard from since in that section.

In this region during the past few years the cattle have suffered more extensively from actinomycosis than perhaps in any other country, and the State Board of Live Stock Commissioners of Illinois having recently taken the stand that the flesh of animals so affected is unfit for and dangerous as human food, we will soon witness in our courts one of the hardest fought legal battles in the history of veterinary sanitary science, one which will probably be quoted in the future as a precedent in dealing with this disease.

We young veterinarians, with these vast responsibilities awaiting us, are now afforded the first opportunity of socially intermingling with many of the oldest and most favorably known veterinarians in America, which, with the pleasure of meeting again many of those with whom we parted when leaving college, will amply repay us for laying aside for a few days our routine of every day life.

We are offered for the first time an opportunity to listen to and profit by a series of papers representing the best thoughts of the oldest and best known section of our profession.

You are more cordially welcome, however, because you now offer us fellowship in your society in a practicable, available, desirable manner, in a way by which we hope to be able in the near future to repay you by adding numbers and interest to this society.

College selfishness, foibles, likes and dislikes, have been partly blunted and overcome by our State societies, but their influence being limited by the boundaries of States, we have come to desire and fully realize the need of a central organization about which to rally, a body which we may look upon as representing our highest ideals of thought and professional conduct. We are grateful to be now offered an opportunity to sit with you in council, to become a part of your organization.

Comprising the numerical half of our profession in the United States, it will be conceded that we should constitute a part of a national organization, and we are glad that there is every promise that we will to-day, in proportion to our age and ability, assume a due proportion of the labor and responsibilities of the United States Veterinary Medical Association, and contribute what we can to round out its national character, that it may henceforth be viewed, not as a society of the Atlantic States, but as one representing the best elements and thought of the veterinary profession of the nation.

This meeting seems to bear with it an unexpressed covenant that your conventions in the future are not to be kept within the former narrow limits, but are to be confined only by the national boundary lines. What a change from the past when we may journey happily together across the Mississippi, over the Missouri, beyond the Rocky Mountains, and convene a far larger assembly than this amid the orange groves on the shores of the Pacific. Such a consummation can scarcely be called visionary when we remember the rapid development and growth our profession is undergoing, and until this or other Association shall cover this entire territory, and include as members a fair proportion of the veterinarians of every section, we cannot be said to possess a truly national veterinary society.

We look upon this meeting as marking the beginning of a revolution in your organization—a revolution which it is hoped will bear you and with you our whole profession a long step forward.

To-day you have convened this meeting doubly as far from the Atlantic coast as in any previous case; you will probably vote upon the longest list of applicants for membership ever presented at one time, look upon more new faces than ever before, and propose to make an important and sweeping change in your manner of admitting members.

You open your doors rather abruptly to a large company of strangers, mostly very young veterinarians, with limited experience in Veterinary Associa-



tions, thus offering to exchange important responsibilities with Western veterinarians.

Heretofore the few members which you held in the West have apparently laid you under no responsibilities to this vast section, and in counting your effective forces or your liabilities or duties, we have never figured as an essential factor, nor have we as Western veterinarians ever felt that the character of your society, its objects or aims, its virtues or shortcomings, its joys or trials, were of any concern to us.

Henceforth we are to mutually share its duties and benefits, its trials and triumphs, its responsibilities and pleasures. Western veterinarians are ready and anxious to take their proper place in your society as a part of a national organization, and meet you in fair numbers to-day to consummate this union. You, perhaps, wished to see more present and certainly it would have pleased us, but after all, like new recruits to an army, before such accessions can prove a help and strength to this society, they must learn how and what to do, they must be organized and trained, their forces concentrated and all thoroughly amalgamated, so perhaps, the not very heavy attendance may bode no ill to you. We hope, however, that those offered may rapidly train into able and willing workers, ever ready to advance the Association towards its highest ideal, and through it to be of value to our whole profession.

From these new members we trust you will succeed in selecting able and willing representatives in every Western State, who will in the future see that the interests of the society shall no longer suffer from neglect, and that we shall, hereafter, furnish our due proportion of members, labor and thought.

When, however, you have secured ample membership in the West, have become intimately acquainted with a large part of our Western veterinarians, have procured among us sufficient competent representatives to look closely after the general work of the society, have all your members under thorough discipline and have held large and well attended meetings in every section of the whole country, you may yet fall short of the highest state of honor and usefulness of such an Association.

We have already mentioned the phenomenal development of the veterinary profession in the West within the past ten years, from a few scattered representatives, mostly foreign born, to more than one thousand regularly qualified veterinarians.

Above and beyond all other reasons we welcome you here in the hope that your presence among us and our amalgamation with you will inspire the mass of this young and rapidly growing part of our profession to higher thought, to deeper study, to rapid, firm, enduring progress.

The outlook here for earnest, competent veterinarians, grows brighter and brighter every day. The general public is rapidly realizing his worth from an economic and humanitarian standpoint in the management of ordinary everyday accidents and ailments, and the State and nation are rapidly discovering the value and need of our profession from a national economic and sanitary view in controlling and eradicating those contagious diseases of animals which so often ruin the owner and cripple the finances of the community, or through other diseases which in addition render the flesh of affected animals unfit for or danger-

ous as human food, or in that long list of diseases which are transmissible through the flesh or through contact from animal to man, usually of a very serious and deadly character.

The social standing, the emoluments, the honors to the competent veterinarian, must advance higher and higher at a rapid pace, while the incompetent, listless practitioner must find his room becoming more and more pinched and unsatisfactory.

We have at present in America but few prominent veterinarians who are really accomplishing something to elevate our profession, so few that they can be counted almost in a moment. Let them work as hard as they may, they can accomplish little towards placing our profession on a level with other learned professions in this country, or with the veterinary profession in many other lands.

We hopefully look to your society as the vital force, and to this day as the birthday, which shall place a whole army of earnest veterinarians in this wide field for observation, research and thought, who, pressing forward harmoniously as one man, may yet during the lives of most of us place our profession on an equality with the veterinary or other scientific profession in any land.

More strongly than any words we can command, we hope you will find in the cordial greetings of my Western colleagues, in their earnest, respectful attention to your deliberations, in their willingness and anxiety to make your stay among us as pleasant as is possible with our imperfect hurried preparations, so cordial and hearty a welcome that you will remember this meeting, the West and Western veterinarians only with pleasure, and will find therein an irresistible invitation to come among us again at an early day.

President Michener responded to the address of welcome on behalf of the Association, as follows:

*Gentlemen of the Association, and particularly of the West:*

There is a great difference between responding to an ordinary speech of welcome, and such an one as has been tendered us by Dr. Williams, and I fear that I cannot fully voice the appreciation of my associates from the East.

Dr. Williams has said so much and has uttered it so sincerely that we would be ungrateful indeed and unmindful of a pleasant duty if we failed to thank you one and all for our reception. We have some of us seen for the first time what is to us the great West, and I feel constrained to plagiarize a prominent man, and repeat that verily had Adam and Eve been placed in this section of our country when expelled from the Garden of Eden, they would have raised their eyes reverently to Heaven and thanked God for the change.

Dr. Williams has given us a good idea of the extensive field for veterinarians in the West. If I can see aright it is in the West that we are to look for our greatest progress. It is here that disease exists upon a scale—diseases that we do not see at all or but seldom in the East, but which you in the West have successfully met. We may arrogantly assume, that as of old, the wise men are in the East, but I must insist that the veterinary profession is an exception and that our brightest, most enterprising men are not content to remain within the narrow

confines offered by our Eastern States. Greatness requires room and it is here obtained.

State universities of the West offer better inducements and more aid than do those of the East, as is evidenced by the veterinary departments of some Western States that compare most favorably with our exclusively veterinary colleges of the East. Let me cite an example of what the West does for its veterinarians by simply calling attention to our friend, Dr. Paquin. Who east of the Alleghenies has done so much? If indeed we except Dr. Salmon, who of us has accomplished any original work.

Perhaps I should have said that to-day we place the corner stone—the foundation of our Association has been building since June, 1863. That the Association has not grown faster is due to the fact of the few artisans employed. With united, harmonious and well-directed work, our building should be completed, its happiest aims achieved and much and lasting good done the profession.

We will now receive the report of the Secretary, who will read the minutes of the last meeting.

Secretary Hoskins read the minutes of the Twenty-sixth Annual Meeting of the Association, as also the minutes of the meeting of the Comitia Minora held at that time. All of which were approved as read.

There being no unfinished business, the President called upon the Secretary to read the minutes of the meeting of the Comitia Minora held September 16, 1890, in the morning.

#### REPORT OF THE COMITA MINORA.

The Comitia Minora of the United States Veterinary Medical Association, was called to order by the President, Dr. Charles B. Michener, at 10:30 A.M.

Members present—Drs. Michener, Hoskins, R. A. McLean, Clement, Huidekoper and Robertson.

Absent—Drs. Wray, Stickney, and Gill.

By appointment—Drs. Lyford, Paquin, and T. Butler.

After reading of minutes, the question of employment of stenographer for the meeting was discussed, and finally it was agreed to employ one at \$10.00 per day, and 50 cts per page of type-written copy of the Proceedings, the expense to be equally divided between the Association, *THE AMERICAN VETERINARY REVIEW*, and the *Journal of Comparative Medicine*.

The subject of those applicants for membership whose names were filed after Sept. 1st, was then taken up and discussed, and

on motion of Dr. Clements, seconded by Dr. Huidekoper, it was decided to recommend for admission all names properly vouched for received to date of meeting. Carried.

The names being read over by the Secretary, and there being objection raised to the recognition of the Veterinary Department of Cornell, and later on, the Veterinary Department of Iowa Agricultural College, this point was brought up for discussion, and participated in by all present, as well as Dr. Winchester, on behalf of Cornell; after which Dr. R. A. McLean offered as a motion, that the former action of the Association, in refusing to recognize Cornell, be reindorsed. Seconded by Dr. Hoskins.

The question being put, was declared defeated, and a ye and nay vote was called for. The count showing on the nay vote, Michener, Huidekoper, Paquin, Butler, Clement, and Lyford.

Yea votes—R. A. McLean and Hoskins.

Dr. Paquin then moved to recommend for membership the names of the graduates of the Veterinary Department of the Iowa Agricultural College. Seconded by Dr. Clement.

Dr. R. A. McLean offered as an amendment: That this Association recognize the Veterinary Department of the Iowa Agricultural College as a regularly organized and recognized Veterinary School. The amendment was accepted, and, on motion, adopted.

Letters and telegrams of regret at their absence from the meeting were received from Prof. J. H. Raymond, Prof. D. McEachran, Prof. A. Smith, and from Drs. N. P. Hinkley, John Tillin, James A. Waugh, Cooper Curtice, Austin Peters, and other members and veterinarians.

On motion, the meeting adjourned.

W. HORACE HOSKINS, *Secretary*.

Secretary Hoskins: The Comitia Minora recommend that the following names be dropped from the roll of membership for non-payment of dues and other causes:

Drs. G. S. Agersborg, Vermilion, Dakota; E. C. Beckett, Boston, Mass.; M. Bunker, Newton, Mass.; Joseph<sup>2</sup> Bushman, Washington, D. C.; L. C. Campbell, Philadelphia, Pa.; C. Col-

burn, West Dedham, Mass.; B. P.<sup>7</sup> Colsson, Mobile, Alabama; J. C.<sup>8</sup> Corlies, Newark, N. J.; J. B.<sup>9</sup> Cosgrove, Worcester, Mass.; L. M.<sup>10</sup> Crane, New York, N. Y.; H. J.<sup>11</sup> Detmers, Columbus, Ohio; W. S.<sup>12</sup> DeVoe, New York, N. Y.; William<sup>13</sup> Dimond, Portland, Oregon; G. H.<sup>14</sup> Farnsworth, Rutland, Vt.; S. S.<sup>15</sup> Field, New York, N. Y.; H. T.<sup>16</sup> Foote, New York, N. Y.; John J.<sup>17</sup> Foy, New York, N. Y.; E.<sup>18</sup> Hanshew, Brooklyn, N. Y.; J. J.<sup>19</sup> Hanshew, Brooklyn, N. Y.; William<sup>20</sup> Harris, New York, N. Y.; W. P.<sup>21</sup> Humphrey, Elizabeth, N. J.; James L.<sup>22</sup> Kemp, New York, N. Y.; Robert<sup>23</sup> Laidlaw, Albany, N. Y.; Alex.<sup>24</sup> Marshall, Brookline, Mass.; William<sup>25</sup> R. Mitchell, New York, N. Y.; William<sup>26</sup> Miles, Charleston, Ill.; Samuel W.<sup>27</sup> Mathues, Elam, Pa.; J. E.<sup>28</sup> McNichol, New York, N. Y.; M. J.<sup>29</sup> Otto, New York, N. Y.; S. L.<sup>30</sup> Richards, Salt Lake City, Utah; J. J.<sup>31</sup> Ryder, Rondout, N. Y.; J. E.<sup>32</sup> Ryder, Jamaica, L. I., N. Y.; J. E.<sup>33</sup> Rich, Hartford, Conn.; Charles<sup>34</sup> Schauffer, Philadelphia, Pa.; William<sup>35</sup> T. Simmons, Boston, Mass.; J. M.<sup>36</sup> Skally, Boston, Mass.; J. M.<sup>37</sup> Walton, New York, N. Y.; Charles<sup>38</sup> Williams, Philadelphia, Pa.; Charles<sup>39</sup> Winslow, Rockland, Mass.; K.<sup>40</sup> Winslow, Boston, Mass.

*Dropped for Unprofessional Conduct.*—Drs. F. S.<sup>41</sup> Billings, Chicago, Ill.; W. B.<sup>42</sup> Brothero, Clearfield, Pa.

*Died Before Qualifying.*—Dr. S. S. Moyer, Hilltown, Pa.<sup>43</sup>

*Deceased.*—Drs. A.<sup>44</sup> Lockhart, New York, N. Y.; G. A.<sup>45</sup> Lathrop, Binghamton, N. Y.

*Resigned.*—Dr. A. L.<sup>46</sup> Hummel, Philadelphia, Pa.

The report of the Comitia Minora was accepted and the recommendation to drop the names of the delinquents from the roll was approved.

President Michener: There is a further recommendation of your Comitia Minora, gentlemen, and it is for you to say what action shall be taken in respect to the expulsion of Dr. Billings, which has been unanimously recommended. I will ask the Secretary to read the letter from Dr. Billings so you may know the tenor of it, and if you feel as your Comitia Minora did this morning, I do not think there is any doubt but what the name of Dr. Billings will be dropped from the list of members of this Association.



Dr. McLean: I rise to a point of order. Our Executive Committee is established for the purpose of keeping out public clamor, such as this, from our general meetings. The letter referred to is utterly unworthy of any man, much less a veterinary surgeon. I move you that the reading of the letter be dispensed with.

Seconded.

President Michener: I am willing to suppress the letter if the Association wish to endorse the action of the Comitia Minora without hearing the letter read.

The motion to dispense with the reading of letter referred to was unanimously carried.

On motion the action of the Comitia Minora recommending the dropping of Dr. Billings' name was approved, and Dr. Billings was declared expelled from membership in the Association.

President Michener: The next recommendation of the Comitia Minora refers to the names recommended for admission to membership with us. The Secretary will please read the names of those recommended by the Comitia Minora.

Secretary Hoskins read the names of the proposed members and on motion of J. C. Myers, Sr., of Ohio, duly seconded, the names presented by the Comitia Minora were accepted collectively.

Mr. Faust: I move you, sir, that the Secretary of the Association be instructed to cast the ballot of the Association for each of the members recommended for admission to membership.

Seconded. Carried.

Secretary Hoskins: Pursuant to the direction of the Association I would announce that I have cast the ballot of the Association for each of the candidates for admission to membership and that the following have been duly elected members of this Association:

Roscoe R. Bell,<sup>1</sup> D.V.S., Am. Vet. Coll. (Dr. R. A. McLean) 7th Ave. and Union Street, Brooklyn, N. Y.; Thomas M. Buckley,<sup>2</sup> D.V.S., Am. Vet. Coll. (Dr. R. A. McLean) 480 Clermont Ave., Brooklyn, N. Y.; Gerald E. Griffin,<sup>3</sup> D.V.S., Am. Vet. Coll. (Dr. W. J. Coates) 5th Cavalry, Fort Reno, Ind. Ty.; Richard R. Morrison,<sup>4</sup> D.V.S., Am. Vet. Coll. (Dr. W. J.

Coates) 141 West Fifty-fourth Street, New York City; Joseph Ogle,<sup>5</sup> Jr., D.V.S., Am. Vet. Coll. (Dr. W. J. Coates) 302 West Forty-sixth Street, New York City; R. W. Hickman,<sup>6</sup> V.M.D., Vet. Dept. U. of Pa. (Dr. C. B. Michener) Greene Ave. and Broadway, Brooklyn, N. Y.; H. B. Ambler,<sup>7</sup> D.V.S., Am. Vet. Coll. (Dr. C. B. Michener) Greene Ave. and Broadway, Brooklyn, N. Y.; J. L. Kilborne,<sup>8</sup> D.V.S., Cornell Vet. Dept. (Dr. J. F. Winchester) Dept. of Agriculture, Washington, D. C.; Richard Letts,<sup>9</sup> D.V.S., Am. Vet. Coll. (Dr. W. E. B. Miller) Bloomfield Street, Hoboken, N. J.; D. S. Breslin,<sup>10</sup> D.V.S., Am. Vet. Coll. (Dr. W. H. Pendry) 94 Adams Street, Brooklyn, N. Y.; A. T. Thompson,<sup>11</sup> D.V.S., Am. Vet. Coll. (Dr. W. Horace Hoskins) Evansville, Ind.; J. Huhne,<sup>12</sup> D.V.S., Am. Vet. Coll. (Prof. A. Liautard) 141 West Fifty-fourth Street, New York City; R. C. Webster,<sup>13</sup> V.M.D., Vet. Dept. U. of Pa. (Dr. W. Horace Hoskins) Media, Pa.; Harry E. Bates,<sup>14</sup> D.V.S., Am. Vet. Coll. (Dr. C. E. Ross) New Haven, Conn.; T. L. Armstrong,<sup>15</sup> D.V.S., Chicago Vet. Coll. (Dr. W. H. Wray) Hotel Richmond, Chicago, Ill.; N. P. Valerius,<sup>16</sup> D.V.S., Am. Vet. Coll., Watertown, Wis.; James A. Waugh,<sup>17</sup> V.S. (Dr. H. D. Gill) 6th Cavalry, U. S. A., Fort Wingate, N. M.; E. A. A. Grange, V.S., Toronto Vet. Coll. (Dr. Tait Butler) Agr. College, Mich.; John Tillie,<sup>18</sup> D.V.M., Iowa Agr. Coll. (Dr. Tait Butler) Muscatine, Iowa; S. Stewart,<sup>19</sup> M.D., D.V. M. (Dr. Tait Butler) Council Bluffs, Iowa; C. A. Carey,<sup>20</sup> B.S., D.V.M., Iowa Agr. Coll. (Dr. Tait Butler) Brookings, South Dakota; G. C. Williams,<sup>21</sup> V.S., Ont. Vet. Coll. (Dr. Tait Butler) Dewitt, Iowa; John D. Rutherford,<sup>22</sup> V.S., Ont. Vet. Coll. (Dr. Tait Butler) Rock Island, Ill.; George A. Johnson,<sup>23</sup> D.V.M., Vet. Dept. Iowa Agr. Coll. (Dr. Tait Butler) Odebolt, Iowa; Louis A. Thomas,<sup>24</sup> D.V.S., Chi. Vet. Coll. (Dr. Tait Butler) Atlantic, Iowa; Gulian C. Fagan,<sup>25</sup> D.V.S., Am. Vet. Coll. (Dr. W. H. Hoskins) 232 East One Hundred and Sixteenth Street, New York City; A. W. Swedeburg,<sup>26</sup> V.S., Tor. Vet. Coll. (Dr. E. S. Walmer) Third St. and Pennsylvania Ave., S. E., Washington, D. C.; John A. Meyers,<sup>27</sup> D.V.S., Am. Vet. Coll. (Dr. E. S. Walmer) Harrisonburg, Rockingham Co., Va.; S. L. Hunter,<sup>28</sup> V.S., Tor. Vet. Coll. (Dr. D. Lemay) Ft. Leavenworth, Kansas; C. Douglass McMurdo,<sup>29</sup> D.

V.S., Am. Vet. Coll. (Dr. D. Lemay) Fort Riley, Kansas; W. H. Richards, V. S., Ont. Vet. Coll. (Dr. D. Lemay) 16 West Fifth Avenue, Emporia, Kansas; C. W. Purcell, V.S., Ont. Vet. Coll. (Dr. W. H. Hoskins) Old Orchard Beach, Me.; M. A. Piche, V.S., Montreal Vet. Coll. (Waugh and Hoskins) Fort Custer, Mont.; Herbert Neher, D.V.S., Am. Vet. Coll. (Dr. C. B. Michener) 350 West Forty-eighth Street, New York City; Olaf Schwartzkopf, V.M.D., Royal Vet. Coll., Berlin, (Dr. W. H. Hoskins) St. Anthony Park, Minn.; James L. Kidd, D.V.S., Am. Vet. Coll. (Dr. W. H. Hoskins) 102 East Main Street, Lexington, Ky.; D. B. McCapes, V.S., Ont. Vet. Coll. (Dr. W. H. Hoskins) Vermilion, South Dakota; W. L. Williams, V.S., Montreal Vet. Coll. (Dr. W. H. Hoskins) Bloomington, Ill.; J. M. Tye, V.S., Ont. Vet. Coll. (Dr. W. H. Hoskins) Muncie, Ind.; A. F. Schreiber, Vet. Dept. U. of Pa. (Dr. W. H. Hoskins) Sixty-first St. and Elmwood Ave., Philadelphia, Pa.; A. S. Barnes, V.S., Ont. Vet. Coll. (Dr. Tait Butler) Maquoketa, Iowa; T. A. Brown, D.V.S., Chi. Vet. Coll. (Dr. Tait Butler) Chariton, Iowa; J. T. Kennedy, V.S., Ont. Vet. Coll. (Dr. Tait Butler) West Union, Iowa; H. N. Waller, V.S., Ont. Vet. Coll. (Dr. Tait Butler) Windom, Minn.; Alexander Plummer, D.V.S., Chi. Vet. Coll. (Dr. Tait Butler) Mammoth Hot Springs, Wyoming; S. S. Baker, D.V.S., Chi. Vet. Coll. (Pres. Williams) 609 West Madison Street, Chicago, Ill.; O. J. Lanigan, D.V.S., Chi. Vet. Coll. (Pres. Williams) Wenona, Ill.; J. S. Spangler, D.V.S., Chi. Vet. Coll. (Pres. Williams) Aurora, Ill.; C. E. Sayre, D.V.S., Chi. Vet. Coll. (Pres. Williams) 3725 Cottage Grove Ave., Chicago, Ill.; A. H. Baker, V.S., Mont. Vet. Coll. (Pres. Williams) 2537 State Street, Chicago, Ill.; Joseph Hughes, M.R.C.V.S. (Pres. Williams) 2537 State Street, Chicago, Ill.; R. J. Withers, M.D., V.S. (Pres. Williams) 2537 State Street, Chicago, Ill.; J. M. Wright, Chicago Vet. Coll. (Pres. Williams) Chicago Vet. Coll., Ill.; G. W. Pope, Chicago Vet. Coll. (Pres. Williams) 2537 State Street, Chicago, Ill.; R. G. Walker, Chicago Vet. Coll. (Pres. Williams) 2537 State Street, Chicago, Ill.; John Casewell, M.R.C.V.S. (Pres. Williams) 639 W. Madison Street, Chicago, Ill.; P. Quitman, Chicago Vet. Coll. (Pres. Williams) Chicago, Ill.; E. H. Ramsey, Ontario Vet. Coll. (Dr.

Paul Paquin) Louisiana, Mo.; L. M. Klutts, Chicago Vet. Coll. (Dr. Paul Paquin) Clinton, Mo.; J. Johnson, Ont. Vet. Coll. (Dr. Paul Paquin) St. Joseph, Mo.; John S. Meyer, Am. Vet. Coll. (Dr. Paul Paquin) St. Joseph, Mo.; Harry B. Piatt, Ont. Vet. Coll. (Dr. Paul Paquin) St. Louis, Mo.; R. J. Sellberger, Berne, Switzerland (Dr. Paul Paquin) St. Louis, Mo.; John W. Conway, Chicago Vet. Coll. (Dr. Paul Paquin) Columbia, Mo.; F. O'Brien, Ontario Vet. Coll. (Dr. Paul Paquin) Hannibal, Mo.; A. Rouff, Montreal Vet. Coll. (Dr. Paul Paquin) St. Louis, Mo.; C. C. Jackson, Am. Vet. Coll. (Dr. Paul Paquin) Marshall, Mo.; J. Hawkins, Ont. Vet. Coll. (Dr. Paul Paquin) Detroit, Mich.; Wm. Shaw, Ont. Vet. Coll. (Dr. Tait Butler) Dayton, Ohio; C. E. Hollingsworth, Ontario Vet. Coll. (Dr. Williams) La Salle, Ill.; F. H. P. Edwards, Ontario Vet. Coll. (Dr. Tait Butler) Iowa City, Iowa; S. B. Nelson, Iowa Agr. Coll. (Dr. Tait Butler) Ames, Iowa; J. M. Phillips, Chicago Vet. Coll. (Dr. D. Lemay) Wichita, Kansas; E. O. Phillips, Chicago Vet. Coll. (Dr. D. Lemay) Wichita, Kansas; R. Price, Montreal Vet. Coll. (Dr. Lyford) St. Paul, Minn.; Dr. Hinman, Ontario Vet. Coll. (Dr. Lyford) St. Paul, Minn.; T. E. White, Am. Vet. Coll. (Dr. Paul Paquin) Sedalia, Mo.

#### HONORARY MEMBERSHIP.

Prof. J. H. Raymond, M.D., 173 Joralemon Street, Brooklyn, N. Y. (first Commissioner of Health to recognize the need of a veterinarian on the staff) proposed by Dr. L. McLean; Prof. H. M. Biggs, Bellevue Medical College, New York City, foot of E. Twenty-sixth Street, proposed by Dr. H. D. Gill.

#### APPLICANTS FOR MEMBERSHIP, 1891.

Dr. J. T. Ryan (Montreal), Chicago, Ill.; voucher, Dr. W. L. Williams. Dr. W. H. McKinney (Chicago Coll.), Geneseo, Ill.; voucher, Dr. M. R. Trumbower. Dr. J. T. Donnelly (N. Y. College), Astoria, L. I., N. Y.; voucher, Dr. R. A. McLean. Dr. E. D. Roberts (Chicago), Janesville, Wis.; voucher, Dr. Joseph Hughes. Dr. D. W. Cormack (Chicago), Watertown, South Dakota. For Honorary Membership, Dr. Theobald Smith, B.A., M.D., Washington, D. C. Proposed by Dr. Cooper Curtice.

The Secretary would beg to announce that, through accident, his list of new applicants has been lost, and he would request a refiling of their names by their respective vouchers.

Pres. Michener: I think we older members would like to have the newly elected members rise in their places that we may know them.

In response to the suggestion of the Chair, the newly elected members rose in their places and were complimented by President Michener as follows:

I must say, gentlemen, that at least you represent the beauty of this National Association. (Applause).

Secretary Hoskins: The Association has refused to recommend for reinstatement the name of Dr. W. T. McCoun of Oyster Bay, Long Island.

President Michener: In that case there is no action for this body to take now as the Comitia Minora have declined to recommend his reinstatement. Of course any individual member has a right to find out from the Comitia Minora the reasons for their refusal, which if deemed insufficient, the matter may be presented at a subsequent meeting of the Association and when the gentleman can be present to defend himself. That is all the action we can take in the matter now.

I will call for the report of the Committee on Intelligence and Education, of which Dr. Austin Peters is chairman.

Dr. Peters submitted the report of his committee through Secretary Hoskins, as follows:

#### REPORT OF THE COMMITTEE ON INTELLIGENCE AND EDUCATION.

BY AUSTIN PETERS, M.R.C.V.S., CHAIRMAN.

*Mr. President and Gentlemen:*

As chairman of your Committee on Intelligence and Education, I have the honor to submit the following report:

Last autumn I placed myself in communication with the other members of this committee, and this summer I sent the following circular to the Assistant State Secretaries:

23 COURT STREET, BOSTON, July 10, 1890.

DEAR DOCTOR:—Will you, as an Assistant State Secretary of the U. S. Veterinary Medical Association, kindly inform me as to the following points:



Have you any laws in your State protecting veterinary surgeons in the practice of their profession?

If there are any such laws, how do they work, and of what benefit are they?

Any information you may have to impart concerning the standing of the veterinary profession in your community; any recent advances it has made which would be of value in our report, or any hints or suggestions you may have to make concerning the work in hand, will be gladly received.

Yours truly,

AUSTIN PETERS, M.R.C.V.S.,

*Chairman of Committee on Intelligence and Education.*

From the various letters which I received in response I have been able to compile the following rambling remarks. In sending the circulars to the Assistant State Secretaries I took the precaution to enclose a stamped envelope with my address printed upon it, in order to be sure of a reply; yet out of a total of twenty-eight circulars I received but twenty answers. It seems to me that there is very little excuse for such lack of interest in matters pertaining to our profession, and it is my intention to furnish our President-elect with a list of the delinquents in order that he may, if he sees fit, appoint new men in their places.

From the view I take of the various matters considered in our report, the subject of Veterinary Education and what may be called Intelligence are so closely associated together that it is impossible to entirely separate them; therefore, they will have to be considered to a certain extent as a whole.

I prefer, however, to begin with the subject of Education, following with other topics which may be of interest to us. In 1863, when this Association was first organized, it consisted chiefly of men who were non-graduates; there were very few members of the Association who were graduates of veterinary schools, because there were no veterinary schools in the country from which they could graduate, and the few having diplomas obtained them by pursuing a course of study abroad. Yet these non-graduates were, as a whole, honorable, conscientious men; good practitioners of their profession; fairly well read, and enjoyed the respect and confidence of the communities in which they lived. But a change has gradually taken place in the *personnel* of our Association; many of the old non-graduates have passed away, and but a few remain, and the members who have joined us of late years have been all graduates of veterinary colleges, and to-day it would be an impossibility for a non-graduate to become a member of our body. This change, however, was brought about in a great measure by these non-graduates themselves; they said that now the country has a number of veterinary schools, there is no excuse for a young man about to enter the veterinary profession not acquiring an education to fit him for the work which he is to pursue in the future. Because they had to acquire their knowledge from the teachings of their fathers, from their readings and personal observations and experiences, was no reason why another generation should do so when it could have the advantages of schools, with instructors trained to their work; dissecting rooms, laboratories and modern text-books at their disposal, together with the advantages of hospital practice and clinics. These men asked for something better and they got it. The question now propounds itself to us, shall we be satisfied with our veterinary schools as they are? or shall we not, in this great age

of progress, ask for something better—a longer, more thorough course of study, with a higher educational qualification for matriculation, and a higher standard of graduation than at present prevails? The old-fashioned non-graduates considered it no reflection upon themselves when they insisted that the present generation should make the most of advantages which they did not have, neither need we feel that we offer any affront to ourselves when we ask for something better.

I will not speak of individual schools, as it might lead to personalities and comparisons which are, to say the least, disagreeable; but we do insist upon a higher education, a proper matriculation examination, a longer course of study in most of the schools—three sessions of nine months each, at least; four sessions equally long would be better. The faculty should contain a large enough number of veterinarians to prevent the school graduating students with but one man's ideas. Where a number of veterinarians are interested in the school the students also receive greater clinical advantages, as in such instances practitioners will take pains to send their interesting or unusual cases to the school for the benefit of the students.

The matriculation examination at most of the veterinary schools on the Continent, where such an examination is required, is a farce, and men enter and graduate who can barely write their own names, much less read or write intelligently or intelligibly. This state of affairs should be remedied at once and no student allowed to enter who did not, at least, present evidences of a good English education, and the higher above this the better. A collegiate or academic course of some kind prior to the student's entering upon his veterinary studies should be encouraged, as it is to such an extent in the medical profession; and to my mind the best preparatory course for the future veterinary surgeon is to attend one of our agricultural colleges; here the study of botany, chemistry, agriculture, the characteristics of the various breeds of animals and general principals of breeding, together with sufficient knowledge of French and German to be able to read foreign veterinary and medical works, is one which will well fit him for his future work.

Dr. M. R. Trumbower, of this committee, writes as follows:—"It becomes daily more and more evident that we need a better and higher educational standard and increased facilities in our veterinary schools, and I think the inauguration of a longer and more scientific course of study is near at hand. I doubt, however, whether all the colleges can be induced to adopt a uniform standard for study and examination; hence our support should be given to such institutions only which indicate a willingness to meet the advanced demands.

"It is absolutely necessary that the requirements for admission (educationally) be made sufficiently strict to exclude many such as were able to matriculate in the past. The professional standard can be raised by a representation of better men, and it is the only way to do it."

I heartily concur in the above and agree with Dr. Trumbower that on this great continent there will always be veterinary schools and veterinary schools, and that in the near future we, as an Association, will have to countenance those only which evince a disposition to meet the requirements of the times.

Dr. Colsson, of this committee, refers to the fact that many veterinary gradu-

ates are unable to write a prescription properly, and even show a deplorable ignorance of the meaning of the signs and symbols used in prescription-writing. He proposes to remedy this by adding an examination in pharmacy and prescription-writing to the matriculation examination of the schools. I do not agree to this, as I think that the course of study in the veterinary schools themselves should deal with and remedy the defect.

In an article entitled "Veterinary Education in America," which appeared in the *AMERICAN VETERINARY REVIEW* for January, 1890, Dr. Tait Butler, of this committee, has said much which I have left unsaid, and I can only add a fervent amen! to what he writes.

In addition to educating the student, we must pay a little attention to the advancement of the practitioner. Because a young man has obtained his degree as a veterinarian is no reason for selling his library, and as a general rule he does not know any more the day after he graduates than he did the day before. A diploma is simply a certificate of having gone through a certain course of study, and successfully passed a required examination; it merely marks a narrow landing on the long stairway of life; and if a man's future is to be a success in the greatest measure, he must continue to be a diligent student and careful observer. Every veterinary surgeon *must* keep abreast of the medical advances of the times; he should take both of the American veterinary journals, one of the English veterinary magazines, and if he can read French or German he should take a French or German veterinary magazine—or both, as the case may be. In addition to this he ought to subscribe to a first class medical periodical, in order to know what is being done in the sister profession. He should not only subscribe to these journals, but he should read them carefully and intelligently after they come.

Because your teachers or professors told you a thing was so when you were a student, fifteen or twenty years ago, do not think it is so to-day, or that your instructor would say it was, if he has kept up with the times; for in many ways medicine has made great advances during the past decade or two, and most writers on pathological subjects are ready to acknowledge that many things which they wrote a few years ago are wrong to-day.

The great discoveries of Pasteur, Koch and other investigators have revealed new truths as to the etiology and character of many diseases, which even if suspected by some, remained unproven until the modern methods of studying bacterial maladies were introduced. The progress made in the application of antiseptic and aseptic methods in surgery is also of quite recent origin, together with the knowledge of the parts played by different germs in the various suppurative and septic processes.

Our veterinary text-books are way behind the times on all these recent discoveries, and will have to be rewritten in the near future, or their places will have to be taken by more modern works.

The Chairman of this committee last year, in his annual report, spoke of the tendency in medical schools to substitute recitations from standard text-books for the didactic lecture—the students studying up a chapter or two in various text-books daily, and then having recitations on what they had read. I am of the opinion, however, that the didactic lecture should remain a feature of the course

in our veterinary schools, for the reasons that our text-books are not up to the times, and that in most of our veterinary schools a cram course of study is given, and in no other way can so much be crammed into a student in the least possible space of time as by the didactic lecture.

As a student I was very fond of listening to lectures, much preferring them to reading. A well arranged course of lectures can be compared to a boy with a plum cake having his nurse pull out the plums, one by one, and feed them to him; while a student reading can be compared to the same boy without a nurse, he having to overhaul a good deal of cake to get a few plums—the plums being the useful and interesting facts, the rest of the cake being the extraneous matter which it may be a waste of time for the student to read, and yet which he will read if his efforts are not wisely directed.

Before proceeding further, I wish to make another criticism on members of the profession. It is the readiness with which some men read articles written for the daily papers on scientific medical subjects, and accept them as valuable facts, such as arguments against the germ theory of disease, and the like. Remember that the "doctors" who write for the newspapers are men who have no easy access to the columns of current medical literature, and that their opinions and arguments carry very little weight with members of their own profession; it would be much better for the eager seeker after truth to confine his scientific reading to veterinary and scientific magazines of acknowledged good character, and leave newspaper science for the perusal of the laity—if members of that great body choose to waste time reading such articles.

Another factor for educating the veterinary practitioner is the Veterinary Association. Most States where there are any number of veterinarians, now have their veterinary societies; some States have more than one, and in some few instances certain State Associations have combined with their colleagues in neighboring States, to form inter-State Associations. These organizations are capable of doing much good to the profession in various ways. If members will take the pains to write good papers for the meetings, these essays and the discussions following them are of benefit to the practitioner from an educational standpoint. The careful reporting of interesting cases occurring in the practice of different members is also of value in this connection. In addition to the above it should create a feeling of good fellowship and *esprit-de-corps* in the profession, and also form a valuable basis for co-operation when any work is to be undertaken for the advancement of veterinary science.

Every veterinarian who takes any interest in his work beyond the dollars and cents he can make out of it, should belong to the local veterinary society where he resides, as well as to the great National organization meeting here to day and to-morrow. In joining a veterinary association the practitioner should not join from a selfish motive, for his own personal aggrandizement, to advertise himself in any way, or to use it as a lever to gain a political position, but he should enter for the purpose of becoming better acquainted with his colleagues, adding to his education and doing all he can in a generous, unselfish way, for the advancement of a noble and useful profession.

The next points of interest to be considered are the results of the circulars sent to Assistant State Secretaries, asking them for information concerning legis-



lation to protect the poor, oppressed, down-trodden veterinarian in different States, and the effect of such legislation upon his well-being, besides some of the interesting incidental matters which were brought out by the replies I received. As far as I have been able to ascertain there are but four States in the Union where laws have been enacted regulating the practice of veterinary medicine, and in all of them the law is quite similar. These States are New York, New Jersey, Pennsylvania and Wisconsin. A description of the law in one State will answer for all, so I take the privilege of reading the letter on the Wisconsin law by Dr. V. T. Atkinson, of Milwaukee, Assistant State Secretary for Wisconsin, following with comments upon the letters of the Assistant State Secretaries in the other three States. The following is Dr. Atkinson's letter:

MILWAUKEE, August 25, 1890.

AUSTIN PETERS, Esq., M.R.C.V.S.,

*Dear Doctor:*—Yours of July 10th received in my absence, hence the delay in answering. In reply: Chapter 347 of the Laws of Wisconsin for 1887 is, I am told, a copy of a law which was in force in New York at the time our law was enacted. It provides that no person shall be considered a veterinary surgeon nor allowed to give expert testimony as such, or to collect fees for services by process of law except their credentials be recorded in the Veterinary Register kept in the office of the Register of Deeds of the county in which the practitioner resides. Such credentials may consist of, 1st, a diploma from a regular college; 2d, a certificate of membership from a duly organized Veterinary Medical Association; 3d, an affidavit of five years practice prior to the passage of the law.

In its workings this law is practically no good. Our State Society has degenerated into a society of empirics. At the last meeting there were only three graduates present, of whom I was one and remained only long enough to sever my connection with it.

You ask what the standing of our veterinarians is. It would be hard to strike an average, but I think the graduates, as a rule, command the respect of the communities in which they reside and that the profession is gradually assuming the important position to which it is entitled.

Concerning *protective* laws, my observation does not lead me to believe that they are likely to be of much service to any practitioner who is worth protecting. It has always seemed to me that a man who could not compete with a *quack* successfully would not be likely to reflect much credit on his associates in the profession even if the quack were removed from competition with him.

Hoping that I may have the pleasure of meeting you in Chicago next September, I am,

Very cordially yours,

V. T. ATKINSON, *State Secretary, U.S.V.M.A.*

Dr. Atkinson's letter is so good that any comments of mine upon it would only take away from its effectiveness.

In New Jersey, Dr. Autenreith, of Jersey City, thinks the law fails to be of any practical benefit to the profession at large, as its provisions are too vague and indefinite; the most hopeful feature about it to him is that the legislators of the State do recognize the fact that in time the existing laws may prove a nucleus for the development of further legislation, which may prove more useful and efficient in the advancement of the profession in that State. So far, the New Jersey law, which was passed two years ago "has proven to be of no special benefit, though perhaps it may have inspired more confidence on the part of the laity in the qualified veterinarian, to such as know of his existence."

Dr. Kooker, writing for Pennsylvania, says that the law in that State has



been properly enforced in only about half the counties, the prothonotaries in the other counties not having been particular as to who registered or how they registered. The Veterinary Associations in Pennsylvania have brought several suits, to bring about the observance of the law, most of which they have lost, and some of which have been appealed to the Supreme Court. He says that in his State the profession is strong and has influential men in every county, and can get any proper law passed that they ask for. The trouble with the present law is that it was drawn up by veterinarians when it should have been by lawyers, and he concludes that it is about as wise for veterinarians to act as lawyers, as it would be for lawyers to act as veterinarians.

In New York State, judging from what Dr. Coates has to say, I should think the law worked better. As to the standing of the profession there, he says that in New York City the public are educated up to the point where they appreciate the qualified veterinarian, and in the rest of the States man's standing in the community and success in obtaining practice depends largely on who he is, and his social standing.

It seems to me that the legislation so far obtained is far from satisfactory; it legalizes a lot of ignorant quacks, some of which can only make their marks when called upon to register in the County Clerk's office, and that they are going to be a good many years in dying off before the coming graduates will be benefited; it recognizes a lot of mountebanks who were much more easily ignored without laws of this class than they are with them. Furthermore, I believe that in this country anybody has a right to employ whom he sees fit to do anything, and that if an individual wishes to employ a quack to do his work he has a perfect right to do so. It seems to be the modern idea that legislation of some kind must be a universal panacea for every ill, whereas, we have more silly laws on our statute books than any country on the face of the earth; and most of them are either not half enforced or else are dead letters altogether. The American people (not including politicians who make the laws) are a pretty level-headed lot, and in time will appreciate the distinction between the educated veterinarian and the quack horse doctor; and also between a veterinarian with an education and a graduate of a so-called veterinary school who can scarcely read or write.

The following letter from Dr. John A. McLaughlin, of Providence, R. I., is so good and expresses so exactly what I think, that I take the liberty of reading it.

PROVIDENCE, R. I., July 8, 1890.

DR. AUSTIN PETERS,

*Dear Doctor:*—In answer to your note, allow me to state that there are no laws, as far as I am aware, protecting the veterinary surgeon. If there are they are a dead letter.

As to the standing of the veterinary profession, it stands better with the public than it does with its own members; in other words, the public are willing, if not exactly anxious to receive us at our own worth, from which I have but one suggestion—that we need *improvement* more than legislation; that we will benefit our profession more if we put our endeavors in our own improvement than in demanding or begging legislation to make a veterinary "trust."

The public are intelligent enough to judge between the capable and the incapable men. If legislation were had to the effect that no citizen could employ any but a graduated veterinary surgeon, I believe it would do more injury than good. The people here would kick, and kick hard!

I look upon the fact that the citizen of the United States is intrusted with more important matters—electing the President, for example—than choosing a veterinary surgeon to treat his animals.

We all want the best of everything—if we can afford it—and if we cannot we want the best we can afford; as it is in everything else, so I believe it is in veterinary matters. The public are willing to receive us, and give us our proper sphere, but I am afraid we fall just a little below their ideal, and I doubt if legislation will bring us one bit nearer to it.

Respectfully,

JOHN A. McLAUGHLIN.

On the other hand there are legislative measures to which we might much better give our attention, and compel the public and the government, both local and general, to appreciate the difference between the well educated veterinarian and the ignorant empiric. Instead of endeavoring to pass laws to prevent some one hiring an ignoramus if he wants to, we should devote our untiring energies to striving to secure a kind of legislation which, to my mind, would benefit us as individuals very much more, as well as the profession and the public. I refer to laws which would define, 1st, what an educated veterinarian is, and then forbid any veterinary testimony given in courts of law being considered as expert, except it be given by a properly educated veterinary surgeon. I would also have it enacted that every State and city Board of Health have for one of its members a qualified veterinarian, and that such only should be employed for inspecting the animals at abattoirs, meats offered for sale in cities where a meat inspector is employed, and that a system of dairy inspection to secure a healthy milk supply be inaugurated in all States, and that the dairy inspectors must be educated veterinarians. I would also have it enacted that when the officials of a State, city or town employ a veterinary surgeon he must be a legally qualified man. By thus compelling official recognition the public would be more rapidly educated up to distinguish between the educated man and the quack, than in any other way.

In my own city of Boston for instance, the seat of culture and learning, where one might expect better things, you will find a veterinary college that you never even heard of; it has but one graduate and only three professors. The triumvirate composing the faculty is the Boston Board of Fire Commissioners, and the graduate who drives around with "V.S." worked in gold letters on his coat collar, was formerly a hoseman. The records say that the Fire Commissioners used formerly to employ a veterinary surgeon when they required one; but the veterinary requirements of the department, as the city grew, became so great that the office of veterinary surgeon was established, and a member of a certain hose company promoted to fill the position. If any public office requiring a young M.D. were filled in such a way there would be a grand hue and cry, but as it is only a veterinary surgeon, it makes little difference who does the work. The emoluments of the position are probably not enough to cause a pang of envy to shoot through any one's heart. I merely mention it as an instance. For a year past the Boston Board of Health has employed a qualified veterinarian as inspector at the Brighton abattoir, which is a step in the right direction; but as yet we have no qualified inspector of meat in the city, and no dairy inspector exists at all, except that milk sold in Massachusetts has to come up to a certain

chemical standard, thirteen per cent. of total solids: yet the milk is consumed without any knowledge of the health or sanitary surroundings of the cows producing it. Boston is ahead of most other large cities in this country in having a properly qualified veterinarian as inspector at the abattoir; in other respects she is much the same and in other ways there are a few cities in advance of the rest in having veterinarians appointed to the Board of Health—for example, New York, Brooklyn and Jersey City. I have taken Boston as an example because living there I know the state of affairs there.

The recognition which we most demand from the general government just now, is the organization of a proper army veterinary corps, to place army veterinary surgeons in this country on an equality with commissioned officers and with their confreres in every other country on the face of the globe having any claims to civilization. I will not say any more upon this matter as I suppose there will be a report from the Committee on Army Legislation, dealing with this subject in detail.

With regard to the standing of the profession in various parts of the country, I have incidentally received quite a good deal of information from the Assistant State Secretaries in response to my circulars. I find that veterinarians have the best standing in the communities where qualified men have been longest known. For example, Boston, New York City, and cities around New York; outside of these centres the West is the portion of the country that shows the greatest appreciation of veterinary science. With their great live stock interests as their principal sources of wealth, it is the Western States which have appointed State Veterinarians and taken the most active steps to pass laws for the eradication and suppression of contagious animal diseases; and it is in the South where the greatest lack of progress is shown.

In Missouri the law is particularly good because it first defines that the State Veterinarian must be a graduate of a reputable veterinary college, beside which he must present good evidence to the trustees of the State Agricultural College that he has a good practical and theoretical knowledge of the diseases of animals before he can receive his appointment. If he cannot perform all his duties alone he can appoint deputies in various parts of the State to act as assistant veterinarians; and the law provides that they also must be competent and graduates of veterinary colleges. This is a fitting tribute to the veterinary graduates that every State should be made to pay. This law provides for dealing with all infectious animal diseases, so that under it the State Veterinarian can take measures to suppress tuberculosis and actinomycosis, as well as other communicable maladies. The chief objection is the amount of salaries—I think \$2,500 a year is too small salary for a State Veterinarian, and I know \$5 a day and expenses will not procure any very heavy timber to act in the capacity of deputies.

Taking one section of the country after another, judging from the letters I have received, and being as brief as possible, I find that in New Hampshire the people appreciate the usefulness of veterinarians, but do not yet readily distinguish between the graduate and quack. In Massachusetts the profession stands for the most part well, especially in Boston. Dr. McLaughlin's letter which I have just read speaks for Rhode Island; and in Connecticut I find that the veterinary surgeon is constantly gaining in the esteem and confidence of people around

the cities where his practice is, although he is little known or understood in the rural districts. Going outside of New England, I have already spoken of New York and New Jersey. In Pennsylvania the profession advances in public esteem by means of the Veterinary Department of the University of Pennsylvania, and the Veterinary Associations, and by the influence of the *Journal of Comparative Medicine*, published in Philadelphia. From Maryland I learn that in and around Baltimore, at least, veterinarians for the most part stand well with the public, and that they are recognized by the medical profession. Going farther South I find that in the District of Columbia and Virginia the qualified man and quack stand on an equal footing, except that the one can demonstrate to the people that he is better than the other; South Carolina contains but two qualified veterinarians; but the one who wrote to me does not complain of his lot at all, always being treated considerately and courteously. Judging from a letter from Savannah, Georgia is much less of a veterinary paradise; the veterinarian is not only unprotected by law, but if a case dies he may be sued for damages by the owner of the patient; there are also no laws for the suppression of contagious animal diseases, and the people do not appreciate a graduate any more than a quack. From New Orleans I learn that the people appreciate the difference between qualified and unqualified men by employing in the majority of cases the former.

In States north of a line drawn east and west through the Ohio river, and west of New York State, the profession advances rapidly and the people appreciate it and make laws for the preservation of their live stock interests; while south of that on the whole, a rather opposite state of affairs exists; this is due largely to the people as influenced by climatic and hereditary influences.

Other matters pertaining to the advancement of the profession could be dwelt upon in this report, but it does not seem best to continue it to too great length.

In conclusion I wish to express my hearty thanks to my fellow members on this committee, and to the Assistant State Secretaries, who answered my circular, for the very able and kindly assistance they have rendered me.

Secretary Hoskins: Dr. Peters has very kindly written to the officers of the Association a letter containing a list of those State Secretaries appointed in the past who have refused to answer communications sent them. The list includes California, Dakota, Delaware, Maine, Utah and Vermont.

Dr. Eves, (Delaware): Mr. President, my name is H. Eves, Wilmington, Delaware. I answered the letter referred to some time ago. I received one a few days ago which I did not answer.

Secretary Hoskins: I will gladly scratch your name off. Are there any others who wish their names scratched off for the same reason?

President Michener: According to the programme, the discussion of the several papers is reserved until all of them have been



read. Accordingly, we will now receive the report of this committee and lay it on the table until the others have been read, or discuss it now, as you desire.

Dr. Griffin: I move that the papers be discussed as read.

Seconded.

Dr. Trumbower: Mr. President, there are a number of committees to report and I fear if we discuss each as submitted we will not get through very early. Therefore I will oppose the motion, as I believe it will be better to take up the discussion after they have all been read.

Dr. Clement: I think it will take no longer to discuss them now than later on.

Dr. Faville: In that respect Dr. Clement is an interested speaker. I agree with Dr. Trumbower and think it better to receive all the papers and discuss them as we see fit afterwards.

The motion being put to a vote was lost and the discussion deferred.

President Michener; I will next call for the report of the Treasurer.

Treasurer Robertson submitted his report as follows:

In bank Sept, 15th, 1890.....	\$694.18
Received from Secretary.....	51.25
	<hr/>
	\$745.43
Paid Secretary deficiency Brooklyn dinner	
account.....	42.00
	<hr/>
Balance on hand.....	\$703.43

Secretary Hoskins: Mr. President, I will simply report that I have the vouchers and everything here for the inspection of the Finance Committee. I will report that expenses last year were \$543.69. Receipts, initiation fees and dues for the year, \$576.50. I would ask you to refer to the items here.

President Michener: I believe the members of the Finance Committee are absent, and I would appoint as members of the Finance Committee, Dr. William Dougherty, Dr. Robertson and Dr. Williams.



We will next receive the report of the Committee on Diseases. Dr. A. W. Clement submitted the report of the Committee on Diseases as follows :

#### REPORT OF THE COMMITTEE ON DISEASES.

By A. W. CLEMENT, Chairman.

During the past year a good deal has been published upon the investigation of infectious diseases. Much of the work shows evidence of thoroughness, while some of it is open to severe criticism.

The duties of such a committee as this are not very well defined, but it seems to us that a passing in review of some of the work which has been brought more prominently before the profession, if discussed in an impartial manner, may be of as much importance as the devotion of more energy to the collection of statistics.

The investigation of the infectious diseases is a slow and oftentimes tedious process. The observer must work methodically, and oftentimes under very great disadvantages.

The work has become so systematized, and so much is being done in this line, that to be hampered by the practical duties of life means, too often, failure in both, to him who would combine clinical medicine with the study of the etiology of disease.

The busy practitioner claims from the laboratory specialist, and his claim is a just one, that such accurate information shall be given him of the cause of disease, and the best remedies to combat such diseases, as are recognized by the more or less scientific classification of clinical medicine. The public claim from the specialist such information as will enable them, if possible, to guard against or to control such diseases as affect a large number of individuals at one time. Such information, usually termed practical, is too often the only information thought to be of any value by the public, and, unfortunately, by a large number of the members of our profession. We are too apt to forget that the only practical information is that which is based upon well understood scientific facts—facts which are the result of patient observation—and the accurate wording of them.

It is not for one moment to be supposed that there are any members of this Association present who are not fully in accord with the germ theory of infectious and miasmatic diseases, and that there is no possibility of the spontaneous origin of this class of diseases. A case of contagious pleuro-pneumonia must be preceded by a case of contagious pleuro-pneumonia. The same is true of tuberculosis, Texas fever, etc., etc. Now, the term germ must not be confounded with the term bacteria, for it has been very well demonstrated that other organisms than bacteria are capable of producing disease.

A well-established example of infection by organisms of a non-bacterial type is malaria in man, and, according to some authorities, Texas fever in cattle. Such diseases as the above are classed as miasmatic diseases; *i. e.*, diseases in which the infecting agent requires a part of its development to take place outside of the body, in contra-distinction to those diseases due to bacterial infec-

tion, where the development is completed inside the body, and the infecting element is thrown off from the body in a condition capable of producing the same disease in another individual.

A great deal of attention is being given at present to those diseases in which there is very considerable evidence of their miasmatic origin. As already stated, the typical miasmatic disease in man is malaria. Its association with non-bacterial micro-organismal infection dates from the researches of Laveran, in Algiers, communicated to the Paris Academy of Medicine in 1881-1882, as also in a large work on the malarial origin of fevers in 1884. As characteristic elements of the blood of persons affected with malaria were found: 1. Pigmented bodies in the interior of red blood corpuscles, which underwent ameboid changes. 2. Crescentic pigmented bodies; 3. A pigmented flagellated organism.

These investigations have since been confirmed by several observers, among them Marchiafava and Creeli, and by Dr. Councilman, of Baltimore, Md.

In 1880, Veterinary Surgeon Griffith Evans described a very fatal disease in horses, mules and camels in India. He discovered a parasite in the blood during life which he first described as a spirillum, but afterward concluded it was a much higher organism. In 1885, Steel found the same parasite as described by Evans, and regarded it as a true spirillum. From clinical observation he concluded that the disease was very closely related to recurrent fever of man. Both Steel and Evans found the disease readily communicable, either by injection or inoculation to dogs, horses, and mules. Cruikshank afterward determined the bodies found in the blood to be a flagellate organism belonging to the group of infusoria.

Burke, Nisum, Raymond and others have written much upon diseases of the malarial type in animals. Some interesting and apparently very accurate investigations have recently been made by Dr. Theobald Smith, of the Bureau of Animal Industry at Washington, D. C. The results of these investigations were published in a paper entitled "Preliminary Observations on the Micro-organism of Texas Fever," read at the Brooklyn meeting of the American Public Health Association, October 23d, 1889. He says: "Southern cattle fever or Texas fever, as it is more popularly known, is an infectious disease of the malarial type." \* \* \* "The infectious agent, bound to a particular locality, is only temporarily transferred by cattle to places free from permanent infection." He experimented upon some native cattle by placing them in the same enclosure with healthy cattle shipped from North Carolina. The experiment was performed at the experimental station in Washington. "The first death occurred in August." \* \* \* "Up to the last week in October, ten had succumbed to the disease and two recovered." \* \* \* "There was also a continual increase or accumulation of the virus in the enclosure, for the animals placed on the grounds late in the season died after an exposure of but one-half to one-third the period which was necessary to destroy those exposed since early summer." Investigations looking toward the bacterial origin of the disease resulted negatively. He found, however, "small round bodies, perhaps 1 m. in diameter, centrally or somewhat eccentrically situated in or upon many red blood corpuscles, which stain fairly in an aqueous solution of methyl violet. They there resemble micrococci in size and form. Unstained they can be seen as pure transparent spaces in the corpuscles."

From these observations made in 1886, and from the negative result of his bacteriological work upon the disease in 1888, Smith came to the conclusion that the disease must be due to a blood-parasite, which for its investigation would need careful microscopical research. For this purpose cattle were brought to the experimental station as above stated. He says: "The intra-globular bodies observed in 1886 were found in all the ten fatal cases of Texas fever." "In fresh spleen pulps they are visible as round or oval, nearly colorless spots from  $\frac{1}{2}$  to 2 m. in diameter on the disk of the red corpuscles, and always somewhat excentrically placid. Careful focussing leaves no doubt that they are within the body of the corpuscles." "The smaller forms then appear as deeply stained cocci, about  $\frac{1}{2}$  to 1 m. in diameter, situated within the unstained circle of the corpuscle. Occasionally the bodies are nearer two feet in diameter, and then the staining may be less dense. Besides the spherical forms, ovoid forms are not uncommon. These usually occur in pairs within the same red blood corpuscles. A still rarer pear-shaped form is encountered in stained preparations of the blood. It is rounded at one pole, while the other is pointed and sometimes drawn out as a short filament." \* \* \* "One other abnormal form found in the blood deserves mention. These dried cover-glass preparations are stained with Loeffler's alkaline methylene blue. A few red corpuscles appear as if their surfaces had been dusted over with minute specks of coloring matter. Whether they are due to the anæmia, or whether they belong to the cycle of the parasite, remains to be determined experimentally."

As to the distribution of the parasites, Smith concludes that the circulating blood, as a rule, contains comparatively few. "They may be numerous in the liver and spleen, and almost absent in the blood of the right ventricle." . . . "They are somewhat more numerous in the spleen than in the liver." Three rabbits were inoculated with spleen pulp stirred up in salt solution without, however, producing any effect. No classification of the parasite has, as yet, been attempted.

The conclusions reached by the author are as follows: "It is essentially a blood disease. There is a continuous or paroxysmal distribution of red blood corpuscles, due to an intra-globular parasite; and the disease results mainly from the incapacity of the internal organs, primarily the liver, secondarily the spleen and kidneys, to transform and remove the waste products resulting from such destruction. In milder cases, the protracted anæmia, which results from the loss of corpuscles, may become the chief cause of exhaustion and death, even when the organs remains pervious and capable of carrying on their respective functions."

Other observers, namely, Billings, of Illinois, and Paquin, of Missouri, consider the disease-producing element to be a bacterium, and both claim to have produced the disease by inoculation. Billings classifies it as a strictly local infectious disease and that only. He, however, does not make use of the classification generally adopted. He describes an infectious disease as one which "*Invariably* finds its origin not in, but outside, of the animal organism, *i. e.*, in the earth, where its microbic cause develops under certain conditions of the climate and soil which offer favorable climatic and telluric influences to its development." The infectious diseases of Billings are the miasmatic diseases of generally ac-

cepted authorities. The germ which Billings believes to be the cause of Texas fever he describes as morphologically the same as the germ which he finds in swine plague. He says: "These two organisms are neither to be classed with micrococci or bacilli." He classifies them as bacteria. He describes them as having a "longitudinal diameter about twice that of their transverse diameter." . . . "They are ovoid." . . . "Their ends are rounded." Like the swine plague germ, he says, they are motile. Inoculation of cultures, he claims, produced the disease in cattle.

It will be seen that the observations of Smith and Billings are quite contradictory. With Smith the bacteriological investigations were negative, but he found intra-organismal blood infection closely related apparently to that found in malaria in man, which is claiming so much of the attention of scientists to-day. Billings claims to have positive bacteriological results, which, he says, he has proven by producing the disease by inoculation of other cattle with pure cultures. I am personally unacquainted with the organism which Billings describes; but through the kindness of Dr. Smith have seen the intra-organismal elements which he describes. These certainly look like the bodies found in the red blood corpuscles of persons suffering from malaria.

Paquin, of Missouri, has done considerable work upon this disease, the results of which were published in "*The Journal of Comparative Medicine and Veterinary Archives*," vol. XI, Nos. 7 and 8. His work is certainly open to very severe criticism. His material was collected in a very loose manner, and under such conditions as to make the investigation of no scientific value. Organs can not be collected in several different places remote from the laboratory where the investigations are to be made, and kept free from post-mortem inspection, even though they be wrapped in cloths soaked in corrosive sublimate solution and immersed in glycerine. Yet Paquin says: "During my trips in Texas and the Indian Territory, September, 1888, I collected soils manures, urines, ticks, livers, spleens, kidneys, bile, specimens from unborn calves, fodders, and waters from various sources on infected grounds. Later, Dr. M. Francis, of the Agricultural College and Experiment Station of Texas, furnished me with a great number of articles of the same order, and later still, Dr. Dinwiddie, of Arkansas, gathered several. 'The specimens of blood, bile and urine were nearly all sealed in glass tubes (pipettes) without being exposed to the air.' He describes several germs which he believes to be different forms of the same organism, and the cause of Texas fever. He inoculated cattle with a modified virus, though it is not very clear how he modifies it, and claims to be able to confer immunity against the disease to cattle so inoculated."

#### TUBERCULOSIS.

This very extensive and fatal disease has claimed a large share of the attention of investigators. Dr. Harold C. Ernst, of Boston, read a very instructive paper before the Association of American Physicians, Washington, September 20th, 1889, entitled "How Far may a Cow be Tuberculous Before her Milk becomes Dangerous?" Dr. Peters was associated with Dr. Ernst in this work. "One hundred and seventeen sets of cover glasses were examined from as many different samples of milk. Of these specimens thus spoiled, twelve turned sour before the examination was completed. These samples were obtained from



thirty-six different cows, all of them presenting more or less distinct signs of tuberculosis of the lungs or elsewhere, but none of them having marked signs of disease of the udder of any kind." . . .

"Of these samples of milk there were found seventeen in which the bacilli of tuberculosis were present; that is to say, the actual virus was seen in 31.5 per cent. of the samples examined. These seventeen samples of milk came from ten different cows, showing a percentage of detected infectiousness of 27.7 per cent.

"Rabbits inoculated with milk from cow, undoubtedly tuberculous but presenting no udder lesions, resulted in an infection of 10.2 per cent.; in guinea pigs, 28.57 per cent.; calves, 40 per cent."

It was also shown that the milk was infectious by inoculation-experiments in 50 per cent. of the cows from which the milk came."

The conclusions drawn by Dr. Ernst are:

"*First*, and emphatically, that the milk from cows affected with tuberculosis in any part of the body may contain the virus of the disease.

*Second*, That the virus is present whether there is disease of the udder or not.

*Third*, That there is no ground for the assertion that there must be a lesion of the udder before the milk can contain the infection of tuberculosis.

*Fourth*, That, on the contrary, the bacilli of tuberculosis are present and active in a very large proportion of cases in the milk of cows affected with tuberculosis, but with no discoverable lesions of the udder."

For the benefit of those who are inclined to belittle the importance of scientific investigations from a practical standpoint, it may be said that Professor Robert Koch made the statement before the International Medical Congress, in Berlin, last month, that as a result of his investigations upon tuberculosis, he had found a substance which has the power of promoting the growth of tubercle bacilli, not only in test tubes, but in the body of an animal. He says, "My experiments are not completed, and I can only say this much about them; that guinea-pigs, which, as is well known, are extraordinarily susceptible to tuberculosis, if exposed to the influence of this substance seem to react to the inoculation of tuberculous virus, and that in guinea-pigs suffering from general tuberculosis, even to a high degree, the morbid process can be brought completely to a standstill without the body being in any way injuriously affected."

I noticed in the telegraphic news from Berlin the other evening that Koch was about to experiment upon human beings affected with tuberculosis.

#### HOG CHOLERA AND SWINE PLAGUE.

You are all aware, doubtless, of the controversy which has been going on with regard to the etiology of certain diseases of swine: As to whether there are two distinct diseases of swine, as described in the reports of the Bureau of Animal Industry; or as to whether there is but one disease, as contended by Billings, which he calls swine plague.

In December, 1889, Prof. Welch published a "preliminary report of investigations concerning the causation of hog cholera." It has been my good fortune to be associated with him in this work for the past two years, and I can, therefore, speak from experience in the matter.

The conclusion has been definitely reached that there are two separate and



distinct diseases, the one known as hog cholera and the other known as swine plague. They are due to separate and distinct organisms, which differ morphologically in their behavior in culture media, and in their reaction when inoculated into animals. It will not be necessary to go into the details of differentiation, as they have been placed before the profession many times in the past few years. Suffice it to say that in this report, while differing in some points from the conclusions reached by the workers on this subject in the Bureau of Animal Industry, the recorded observations harmonized with the facts observed in the investigations of these gentlemen, as reported since the year 1885.

Examination of direct slab cultures from the spleen, sent by Dr. F. S. Billings, proved them to be, in nearly all instances, pure cultures of the hog cholera bacillus. Much confusion has resulted, in the opinion of these investigators, from Dr. Billings' attempt to identify this organism with that of schweineseuche.

#### PLEURO-PNEUMONIA CONTAGIOSA.

Nothing has been done lately, that I am aware of, in the investigation of this disease. The methods employed by the government—that of slaughtering diseased and exposed cattle, and the thorough disinfection of stables—have been so far successful that to-day the disease is thought to exist only in a very limited area around New York City.

Many more observations upon contagious and infectious diseases have been made, but the time will not permit your committee to report further upon them at this meeting.

Pres. Michener: I will call upon Dr. Salmon for the report of the Prize Committee.

Dr Salmon: Mr. President, there have been no papers presented to me as chairman of that committee, and consequently no prizes to be awarded.

Pres. Michener: I will call for the report of the Special College Committee, of which Dr. C. C. Lyford, of Minnesota, is chairman.

#### REPORT OF THE SPECIAL COLLEGE COMMITTEE.

By C. C. LYFORD, M.D., V.S., Chairman.

*Mr. President and Gentlemen:*

I sent letters to the different colleges, with a request to answer a certain list of questions regarding the course of instruction they would suggest and the requirements, with a view to establishing a uniform course of instruction. I received from many of them simply their prospectus, and from others I received letters which I will read:

MONTREAL, 5th September, 1890.

*Dear Lyford:*

In reply to yours of August 20th, I beg to say that I have repeatedly suggested what is now proposed, and of course will only be too happy to find that others are working in the same direction.

I have, however, given up any expectation of such a desirable arrangement being arrived at, in Canada, at least.

I beg to suggest that (a) every veterinary school should have a uniform matriculation, examination in writing, arithmetic, including vulgar fractions, reading aloud, dictation, English grammar, geography, and Latin. (b) The curriculum should embrace anatomy, physiology, history, pathology, and pathological anatomy; bacteriology and parasitic diseases.

Chemistry: Materia medica, veterinary medicine, and surgery. Diseases of cattle, sheep, and swine (botany or zoology, optional).

(c) That the course should extend over three years at least—three sessions of six months each—which may be subdivided into six sessions of three months each.

(d) That a uniform written examination for the final or pass examination be also adopted.

(e) That uniform fees be charged for the different courses in all the colleges.

Of course, these are my own views only. Before I could subscribe to their adoption I would have to lay them before the Faculty, but I have little doubt but they would be approved by them.

If Chicago and Toronto be got to join in such an arrangement, much good will have been accomplished.

Wishing the U. S. V. M. Association every success in such good work, and assuring you and them of every support and assistance I can give them in the accomplishment of it,

Yours very truly,

D. McEACHRAN, *Dean*.

TORONTO, September 13, 1890.

*My Dear Sir:*

I have just returned from England. In reply to yours of the 1st, I have to state that I do not object to a three-session course, if all the principal colleges do the same, and carry it faithfully out.

I think compulsory practice under a qualified veterinary surgeon during the *greater part* of the *summer vacation*, is preferable to a *summer session*. In Britain a summer session is done away.

You will notice from Annual Announcement sent that students are either required to pass an entrance examination, or present satisfactory testimonials as to education.

In some instances, if a candidate fails, he is allowed (the same as in Edinburgh) to undergo a second examination during the following summer. This, in most instances, has done well; in others, however, the candidates, finding they could not pass their examination, have gone to other colleges, and duly graduated after attending one session.

I have understood that the American Veterinary College curriculum requires three sessions. I find, however, if a student attends one session here he can graduate after attending another session at that college.

Mr. Mitchell, of Indiana, who entered our college beginning of session 1888-9, went to American Veterinary College in October last, and graduated in February. I merely mention this fact (which Prof. Liautard can explain); I am not doing so in a spirit of fault-finding, as I highly esteem both Prof. Liautard and Mr. Mitchell—the former for what he has done for our profession, and the latter as an excellent student and a worthy young man.

One Board of Examiners is impracticable. In Canada every Province has control of all educational matters. You are also aware that some agricultural colleges in your country are granting veterinary degrees, which is quite right when that degree is merely a branch of agricultural science; but such degrees are given to men who intend following the veterinary profession as a means of livelihood. Agricultural colleges are of great value, but I do not know any of them that have proper facilities for the thorough teaching of our profession.

I am sorry I cannot be present at your meeting. With kind regards,

Yours in haste,

ANDREW SMITH.

Mr. C. C. LYFORD, V.S.,  
Tremont House, Chicago, Ill.

PHILADELPHIA, September 13, 1890.

*Dr. C. C. Lyford, Chairman.*

MY DEAR SIR: In reply to your letter of August 20th, I desire to say that our Faculty is in hearty accord with the movement to have the veterinary colleges of this country adopt a common standard of requirements for admission. In this, however, we might add that we could not consent (for our own school) to the adoption of a standard lower than that already adopted by us.

I very much regret that duties here will prevent my being with you at the meeting in Chicago; however, one of our Faculty, Dr. Zuill, will be in attendance.

I remain very sincerely yours,

JOHN MARSHALL.

NEW YORK, September 13, 1890.

*My Dear Doctor:*

Yours of the 7th at hand.

I favor very much a curriculum requiring a three-years' course—a preliminary examination in such branches as one would receive in a common school, and a Board of Examiners, composed of a teacher from each of the various veterinary colleges; that teacher to be delegated by the Faculty or Trustees of the school from which he came.

Yours very truly,

HARRY D. GILL.

To DR. C. C. LYFORD,  
*Chairman.*

NEW YORK, August 25, 1890.

*Dr. C. C. Lyford, Chairman.*

DEAR SIR: In reply to your note of the 20th, I beg to inform you that I have mailed you this A.M. one of our Announcements for 1890-91, where, I hope, you will find the information desired. I send you this, as I do not exactly see what you desire, and thought perhaps the Announcement would tell you all.

I remain yours truly,

A. LIAUTARD.

NEW YORK, September 10, 1890.

*Dear Doctor:*

Yours is just received. As the questions you ask me to answer are part of statements which I intend to present the Association. I will be pleased to offer them to you on Monday or Tuesday, as I shall be then in Chicago. I can, however say (1) I am in favor of a three-years' course, and (2) I believe I am the *first* who suggested and recommended the establishment of a Board of Examiners. The minutes of the Association and the back volumes of the REVIEW will show my claim to priority. But more later on.

Yours truly,

A. LIAUTARD.

ROBITAILLE, P. Q., August 29, 1890.

*My Dear Sir:*

Your letter of August 20th has just been received by me here. The U. S. Veterinary Association has had for some years now a committee upon "Single Standard" for the various schools, to whose chairman I have from time to time written my ideas concerning the matter; therefore a communication of length from me to you will not be necessary at this time. It would, in my opinion, be very much to the advantage of our profession if all of the American schools advanced their standard to that, let us say, of Montreal. That they will do so, I do not believe. Our art and science *cannot* advance so long as the great majority of its practitioners begin life with eleven months, or less, of study in ungraded schools; and we are the only veterinary profession which asks our public to believe that there is so little in our art.

Yours truly,

CHARLES P. LYMAN.

Professor C. C. LYFORD,  
Minneapolis, Minn.

CHICAGO, August 27, 1890.

*Prof. C. C. Lyford, N. W. Veterinary College, Minneapolis, Minn.:*

DEAR SIR: Before receiving your letter we mailed you our prospectus for the coming session. We do not know if this has given you the information required; if not, please state more fully what you want—whether graduation or matriculation—and oblige,

Yours truly,

R. J. WITHERS,  
*President.*

President Michener: The next in order will be the reception of the report of the Committee on Army Legislation.

Dr. R. S. Huidekoper, Chairman of the Committee on Army Legislation, made the following report:

## REPORT OF THE COMMITTEE ON ARMY LEGISLATION,

BY DR. R. S. HUIDEKOPER, V.S., Chairman.

Your committee has the honor to submit the following report:

After our appointment as a committee on army legislation, at the meeting of the United States Veterinary Medical Association last year, we collected, from all sources, copies of the various bills which had in past years been submitted to Congress on the subject of army veterinary legislation, and were furnished with copies of several new bills containing more or less changes from previous ones. From these we made a digest and outlined a bill asking for the organization of a veterinary department, to be added to the other departments of the United States Army. We asked in this bill for the organization of a corps of veterinarians, to consist of one chief veterinarian, with the rank of colonel; one veterinarian, with the rank of lieutenant-colonel; one veterinarian, with the rank of major; ten veterinarians, with the rank of captain, and twenty veterinarians, with the rank of lieutenant.

This draft of the bill we submitted to General Schofield, to the Surgeon General, to officers of the staff department who would be especially interested in it, and to the officers at a number of military posts both in the East and West, by whom the matter was courteously considered; and we received advice both from older officers, high in rank, and from younger officers, who are at present actively engaged in the practical details of the cavalry and artillery. After mature deliberation as to what was needed, and careful consideration of the limit which we could expect to obtain from Congress, in numbers and rank, for the new corps, we submitted a modified draft of the bill to General Schofield, who still further modified it into a form which would be acceptable to him, and this we gave to the Honorable H. H. Bingham, of Pennsylvania, who kindly introduced it into the House of Representatives, where it was read twice, referred to the Committee on Military Affairs, and ordered to be printed on January 6th, 1890, Number H. R. 3912, 51st Congress, 1st Session.

In the next few weeks we made a number of visits to Washington, and saw individually each member of the Committee on Military Affairs in the House of Representatives. At about that time Senator J. Donald Cameron, of Pennsylvania, introduced the same bill into the Senate. We obtained permission and an invitation from the chairman of the Committee on Military Affairs of the House,



for the commander of the cavalry post at Fort Myer, other cavalry officers, a representative of the medical department, a former staff officer of General Sheridan—who, under General Sheridan, had investigated the subject of veterinary service—and other officers to appear before the committee, which they did, stating in distinct terms the necessity for the organization of such a service. These officers, unquestionably, exercised considerable weight with the committee. The bill was referred by the Committee on Military Affairs to the War Department for its consideration, and, to our surprise, was returned with an endorsement of the Major-General commanding the army, stating that while improved veterinary service was undoubtedly needed, he questioned the advisability, at the present time, of forming a new department, and adding so many commissioned officers to the roster of the army. Your committee called upon General Schofield, and, at its solicitation, the General was also called upon by members of the Committee on Military Affairs, when we learned that General Schofield was not, as the endorsement seemed to indicate, opposed to the establishment of a more efficient veterinary service, but that, with the large number of other demands which were being made in Congress for the army, he deemed it unadvisable to attempt a service on so large a scale at present, and, by his advice, a new bill was framed, submitted to him, and, with his approval, was introduced into the House of Representatives on March 26th, 1890, by General Joseph Wheeler, of Alabama, under the number H. R. 8638, 51st Congress, 1st Session.

It reads as follows :

A BILL TO PROVIDE FOR A MORE EFFICIENT VETERINARY SERVICE.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled :*

That there shall be, and hereby is, added to the quartermaster's department of the United States Army a veterinary division, which shall consist of one chief veterinarian, with the rank, pay and allowances of a major of cavalry, who may be appointed by the President of the United States, by selection, with and by the consent of the Senate ; four veterinarians, with the rank, pay and allowance of the first lieutenant of cavalry, and ten assistant veterinarians, with the rank, pay and allowances of second lieutenants of cavalry.

SECTION 2. That as soon as practicable, after the passage of this act, the President of the United States may appoint a veterinary medical examining board, which shall consist of the chief veterinarian, two officers of the quartermaster's department, and two officers of the medical department, whose duty it shall be to examine such candidates as shall present themselves for examination for appointment in the veterinary division, and shall report and certify to the Secretary of War the names of the candidates who shall have passed the highest examination satisfactory to said board.

SEC. 3. That upon the receipt from the said examining board of the certificates of the candidates who shall have passed the highest satisfactory examination, the President of the United States may appoint to the various offices junior to the chief veterinarian said successful candidates, the said appointees to take rank according to the order of merit certified by said examining board, not to exceed the number provided for in Section 1 of this act.



SEC. 4. That all veterinary surgeons of the United States Army who, at the passage of this act shall be in service, may be granted three months' leave of absence with full pay, for the purpose of preparing themselves for examination.

SEC. 5. That the Secretary of War shall hereafter appoint from time to time a veterinary examining board, which shall consist of the chief veterinarian and two veterinarians of the United States army veterinarian division, to examine candidates for the position of assistant veterinarians, with the rank of second lieutenant and for promotion in the division.

SEC. 6. That promotion below the rank of field officer shall be by seniority, but no officer of the division shall be entitled to promotion thereby until he shall have been examined and approved by a veterinary examining board; and if any such officer fail on examination he shall be suspended from promotion for one year, when he shall be re examined before a like board, and in case of failure on such re-examination he shall be discharged from the service.

SEC. 7. That officers of the veterinary division shall not be eligible for promotion other than in that division.

SEC. 8. That any of the present veterinary surgeons who shall fail to pass the examination required by Section 2 in this act shall be discharged with one year's pay.

The bill was returned to the committee with the approval of the War Department, but was placed upon the calendar of the House by the committee, with still further modifications, which consist essentially of the reduction of the rank of chief veterinarian from that of major to that of captain of cavalry, and the elimination of the word "rank" in connection with the position of the other officers. In the Committee on Military Affairs of the Senate, the matter was under consideration when the modification took place in the House of Representatives, and your committee then deemed it unadvisable to spend further time in the Senate until the matter was settled in the House.

In a letter from General Joseph Wheeler, under date of August 26th, your committee is informed "that the veterinary bill has been reported favorably and will probably soon come up in the House, and it is understood that the Military Committee will have a day, and that we expect to get the bill up." Your committee is assured that the word "rank" will be reinserted by the Military Committee in the Senate, and that after a conference committee the change will be accepted by the House.

At an early period in the winter, and at various times later on, we were informed by officers at the Army Headquarters, by Senators and by Congressmen who were interested in this legislation, that they were in constant receipt of letters opposing the action of your committee, and requesting their influence to check any action being taken on the bills introduced in behalf of the United States Veterinary Medical Association; also, from time to time, other bills, looking toward the organization of a veterinary corps in the army, were introduced both in the Senate and in the House of Representatives. Upon investigation, your committee found that the other bills introduced in the Senate and the House of Representatives, and the opposition to the action of the committee of the United States Veterinary Medical Association, emanated from the same sources. These sources were principally veterinarians now in the employ of the

army, some as veterinarians in the cavalry, and others as contract veterinarians in the other arms of the service. Whether this bill passes the present Congress and becomes a law or not, we are satisfied that very great progress has been made. A live interest has been aroused in the minds of the army officers themselves that an improvement in the system of veterinary service is demanded in the interests of the army itself. Members of Congress have learned that it is needed, and we have the precedent of having carried a bill through the Committee on Military Affairs and placed it on the calendar. For the guidance of your future committees, we feel entitled, as the result of our hard labor, to be competent to judge of what is needed, and we presume to dictate certain courses which must be pursued if any success is to be looked for.

1st. A bill for an army veterinary service must have the approval of the War Department before it will be considered in committee.

2d. The first service established must be a small one, with officers of moderate rank, or it will otherwise incur the natural jealousies of officers of other arms who would be outranked at small posts.

3d. No service will be established which does not demand examination as one of the qualifications for entering it.

4th. The misfortune of any one or more veterinarians previously employed by the government, who might be thrown out by an examination, must not be allowed to weigh one atom as against the good of the whole profession and the better service for the army which could be rendered by veterinarians endowed with the authority with which a commission as an officer would invest them.

Your committee has performed its work with regard only to the good of the profession at large; it would like to have done more, but every matter had to be looked to in person, and numerous visits to Washington entailed not only loss of time, but also considerable expense. We are indebted to a member of the Association, who desires to withhold his name, for a check which defrayed the expense of one visit.

Respectfully,  
RUSH S. HUIDEKOPER, *Chairman*.  
DANIEL LEMAY,  
COOPER CURTICE, *Committee*.

#### REPORTS OF VARIOUS COMMITTEES.

Secretary Hoskins submitted the report of the Committee on Publication, as follows:

During the year we have issued one thousand copies of the Revised Constitution and By-Laws: 400 copies of Lists of Officers and Members; 500 copies of Lists of Officers and Committees; 500 reprints of all Committee Reports; 500 reprints of Itinerary for Chicago Meeting; 350 reprints of Proceedings of 26th Annual Meeting; 1500 Programs of Meeting.

All these have been first furnished to the members, after which the balance were distributed among members of the profession all over the country. In all about 4000 pieces of mailable matter have been distributed over the country, entailing a vast amount of clerical work. During the year I have completed for the

archives of the Association a complete list of all the members of the Association from its organization and in part completed a history of their connection and what has ultimately become of them. I have also compiled a list of about eight hundred veterinarians outside of our Association, with their addresses, and of what college they are a graduate of. I have issued twenty-two certificates of membership during the Association year, and much other matter of only clerical importance, to the welfare and usefulness of the Association.

President Michener: We will next receive the report of the Special Committee.

Dr. Huidekoper: I think your Committee have nothing to report except progress. We have had one or two meetings, but no action has been taken sufficiently definite to submit to the Association in the form of a report.

President Michener: The next in order will be the report of the

#### SPECIAL COMMITTEE ON TUBERCULOSIS.

Dr. Hoskins of this Committee reported as follows:

Mr. President and Gentlemen: I had expected to find in Chicago to-day a full report from Dr. McLean, but it has not arrived. I can simply state in his absence that we followed instructions and carried the resolutions to Washington, where we were kindly received by the Hon. Jeremiah Rusk, Secretary of Agriculture, who gave us a very patient hearing. We found him in entire accord and sympathy with the spirit of the resolutions and willing to aid us all he could to forward the object set forth in the resolutions.

I am sorry a more extensive report is not present—it must be in Chicago somewhere.

The following was received too late to be read at the meeting:

*To President of U. S. Veterinary Medical Association:*

As Chairman of the committee appointed to present the resolutions anent Tuberculosis, adopted by this society, and to be presented to the Secretary of Agriculture, I beg to report: In company with Drs. Michener and Hoskins, said resolutions were presented, and we were cordially received by the Secretary, and he, through us, begs to thank the members of this society for their interest and promised support in the suppression of a disease having such important relations to both man and beast.

L. McLEAN.

Secretary Hoskins submitted his report as follows:

I have to report that letters and telegrams of regret have been received from several members.

I have also to report to you the resignation of Dr. A. L. Hummel, whose letter I will read: "Please present my resignation to the U. S. Veterinary Association."

I have also, Mr. President, to report to you the death of Dr. G. A. Lathrop, whom we elected one year ago at Brooklyn, also the death of Dr. Alexander Lockhart and Samuel R. Percy, honorary member of this Association.

On motion of Dr. Faust, seconded by Dr. Hoskins, the resignation of Dr. Hummel was accepted.

On motion of Secretary Hoskins the Chair was authorized to appoint a committee of three to draft suitable resolutions on the death of Drs. Lockhart, Lathrop and Percy, which resolutions are to appear in the minutes of this meeting and an engrossed copy of the same forwarded to the families of the deceased members respectively.

President Michener: Since these deceased members were well known by some of our older associates in the East, I should like to appoint as a committee to draft these resolutions, Dr. Hoskins, Dr. J. L. Robertson and Dr. Dougherty as that committee and they will act.

#### REPORTS FROM ASSISTANT (STATE AND FOREIGN) SECRETARIES.

On the call of the roll of States, the following responded: Connecticut by a communication from Dr. George Bridges, as follows:

STAMFORD, N. Y., September 6th, 1890.

*W. H. Hoskins, D. V. S.:*

*My dear Doctor:*—Owing to a long siege of sickness and later a forced rest I have not been able to perform my duty of Assistant State Secretary for Connecticut as I would like. I am here trying to recuperate and consequently will not be able to make much of a report, which I trust under the circumstances you will pardon. I regret very much my inability to be with you at Chicago, but it cannot be helped.

About the 1st of July I sent out printed slips to every veterinarian in the State and nearly all responded. I find our State has its share of contagious diseases and I venture to say that no State in the Union has less provision for enforcing its laws relative to contagious diseases. Indeed, were it not for the voluntary aid given stock owners by members of our profession, the loss to the community would be far greater than it is. We have a flourishing Medical Association, composed of men who are workers and leave no stone unturned to benefit the profession and elevate its name in the eyes of the people at large. We failed in the last Legislature to get any legislation to protect the people from

quackery and ignorance, and I do not anticipate we will be very successful in that line for some time to come, and yet but few people will employ a quack when an educated veterinarian can be had.

It is our intention to try for an improvement on our present laws and better means for their enforcement at the next convening of the Legislature. Glanders are prevalent all over the State and now and then breaks out in some locality or other. Last year an epidemic broke out in the city where I am located and caused a loss of \$10,000 (ten thousand) dollars to horse owners before it was stamped out. Here again I found that the veterinarian was of little account unless some power was given him to act authoritatively; the Humane Society came to my aid and it was stamped out (for the present at least) in this locality. The only power they have is to quarantine, which in itself is after all a good law provided some one was remunerated for enforcing it, and keeping track of it.

**PLEURO-PNEUMONIA**.—None reported—thanks to the good work of the Bureau of Animal Industry.

**HOG CHOLERA**.—But few cases reported. Farmers have become aware of the importance of isolation and good hygienic conditions, which I think helps keep this disease under subjection; also care in importation plays an important part.

**ANTHRAX**.—Some five or six cases reported which I believe were in Greenwich, near the border line of New York State.

**RABIES**.—No cases reported.

**TUBERCULOSIS**.—This disease is very much on the increase; all report more or less cases and one veterinarian claimed he could take me to cases of it at any time.

The Commissioners of Diseases of Domestic Animals report it far too plenty for the good of the people, and so reported to the Board of Agriculture, but no action was taken by that Board. Last spring Dr. Gardner and myself examined a herd of 67 head and found some 15 affected with tuberculosis. The diseased were separated from the healthy ones. Shortly afterwards they were all sold at auction, after the auctioneer had stated the facts and cautioned the buyers that they bought at their own risk. The diseased ones were bought by a butcher for \$10 per head and the balance were scattered among the farmers, which sooner or later will be heard from.

Not long since, June I think, typhoid fever broke out in Waterbury, and was thought to be due to infected milk. The milk was analyzed by one of the professors of Yale College and found to contain the microbes of that disease. The State Board of Health in July's report stated the fact, claiming it to come from use of milk from diseased cows. I failed to find the cows were examined by any one, and no one could state that the milk did not become infected through some other sources. The usual variety of diseases that equine species is heir to claims our attention.

Typhoid influenza in the larger cities is sometimes very alarming, but this year I believe the death rate has not been as large as formerly.

Trusting you will excuse this report and its mistakes under existing circumstances and hoping you have a successful and pleasant and profitable meeting, I am, yours fraternally,  
GEO. BRIDGES.

Dr. Lyford: I had expected here an extensive report from the State Board of Health of Minnesota, but it has not arrived. Last year we had 65 cases in our own neighborhood, but I think it will fall short of fifty this year, though within the last six weeks I have ordered twelve killed and two were ordered killed the 1st of this month.

I have an article here that may be rather too long for the re-



port, though it is quite interesting. It refers to a case the Board of Health called on me to look after, and report as far as possible the cause of an outbreak of tuberculosis.

#### TUBERCULOSIS IN PIGS—CONTAGION FROM EATING AFFECTED MEAT.

BY PROFESSOR C. C. LYFORD, Minneapolis, Minnesota.

On the 15th of May I made the trip to the farm in Anoka County, near Lally Lake, in company with S. D. Brumball, V.S., and Mr. Parker. There we found five sows who had twenty-nine sucklings pigs from two to four weeks old—which to ordinary observation would be considered in good health. Four of these sows were Poland China, the fifth, a Jersey Red. The latter showed a tendency to cough—though of so mild a nature that it might not be noticed under ordinary circumstances. All of them seemed to eat and feed well, and were in good health, excepting one of the Poland Chinas, which had had nine pigs two weeks before, and was thought to have run down on that account, showing no other signs of disease.

At first it seemed a question as to how it had originated, but upon investigation I found that there had been from twenty-two to twenty-five last spring pigs all apparently in good health, up to January 1st, prior to which time they had run together with fat cattle around farm buildings. During the latter part of December six pigs were sent to their farm some four miles away, the others still run with cattle as before. About the middle of January a steer about five years old became emaciated, the bowels being very loose for some weeks, and a cough having appeared. The animal was almost unable to get up, consequently was killed and thrown into a back yard for the pigs to eat. Upon examination of the steer the foreman of the farm reported that his lungs, liver, spleen and kidneys were studded with indications of tuberculi.

During the month of February three to five barrows became weak, especially across the back, and either died or were killed. The foreman reports to have opened each of them, and in every case found lungs, liver, and kidneys with the same markings as those in the steer. Nothing more was thought of their cases until some two weeks ago (May) when eight hogs, apparently in good condition, were received by DeWitt & Sons, Minneapolis, which were killed and dressed, and in each and every case the lungs, spleen, and kidneys were more or less affected with tuberculi. These were reported having been examined by Inspector Davies, DeWitt and Schwartzkopff. Specimens from the above cases I have for investigation. Some weeks prior to receiving the above shipment, six hogs were brought from the other farm, being from the litter, as before said, which were found in good health, and passed inspection.

I might herestate that we found a seven-year-old cow on the first farm, which had been farrow from the past year, being greatly emaciated and having a severe cough. This Mr. Parker consented to have killed for investigation. This was done and we found here a mass of the tuberculi. Her last calf was killed when a few weeks old for veal, and the cow, said to have taken cold at the time of calving, which took place in a severe storm, was dried up and has since been in

poor health. No other case of the kind has been known to have been on the farm, excepting one some three or four years ago. The other stock is said to be in good health, but I did not inspect them as they were out at pasture. At the other farm a bull is reported as not thriving, they being unable to fatten him. This case, with the other stock, I think should be looked to. It might be well to state that the pigs received little or no milk from the cows on the farm, there being several calves which are said to have taken it all. Some twenty this spring calves were in the yard, being from Herford bulls owned on the premises, the bulls being apparently healthy and from two to three years old.

The five sows before mentioned were allowed to eat the steer with the hogs, and as none of the hogs were free from disease, it is more than probable that the sows are affected with the same. Some sixteen of the suckling pigs have already been sent to the adjoining farm, all of which should be made note of on account of the milk received from the mothers, if they are also found to be suffering from tuberculi.

Wisconsin, Dr. Atkinson reported as follows:

As State Secretary from Wisconsin, I do not know as I fully appreciate what you desire. I do not know that I am competent to make an exhaustive report at this time. In this connection, however, there may be a matter of interest to some. My predecessor was Dr. Rowland, of Monroe; he is probably dead by this time. I mention this as a matter of information to the members of the Association.

So far as our State is concerned, as I said in my letter, I think the veterinary profession is gradually assuming the place it is entitled to hold. During the last year as State Veterinarian, I disposed of sixty cases. We have no case of pleuropneumonia. We have had occasional outbreaks of hog cholera. Our loss from that source is not great, perhaps owing to the local quarantine and the power to enforce it conferred on our Board of Health.

The outbreak of hydrophobia that is mentioned in Dr. Hewitt's report, was on the Mississippi river near our State border. A similar outbreak occurred on our side of the river at about the same time and some six or eight animals were destroyed, although I do not think the diagnosis was verified by any one competent to make it.

We had an outbreak of trichinosis and one death from it in the City of Oshkosh. Trichinosis and tuberculosis prevail to some extent, though not so much in our State as in some others. I am sorry I cannot make a more complete report and I make this from memory in order that the State may not be allowed to pass.

Secretary Hoskins: Mr. President and Gentlemen: I have applications from J. F. Ryan, W. H. McKinney and J. J. Donnelly for membership, all of whom are properly vouched for.

I also have a communication from Dr. Cooper Curtice, of Washington, D.C., which I will read, proposing for honorary membership the name of Dr. Theobald Smith, of Washington, D.C., B.A., M.D., graduate of Cornell University (1884 to 1890)

Laboratory work of Albany Medical College, Bureau of Animal Industry.

I would like to call your attention to one thing which was omitted but which can now be done by unanimous vote, and that was the action of the Association electing to honorary membership the candidates recommended by the Comitia Minora. I would therefore move that the recommendations made by the Comitia Minora as to the names presented for honorary membership in this Association be approved and that they be duly elected. Seconded. On the ballot being cast, the following named parties were declared duly elected to honorary membership in the Association: Prof. J. H. Raymond, Brooklyn, N. Y.; Prof. H. M. Biggs, New York City, N. Y.

Secretary Hoskins: Inasmuch as we have lost a great deal of time this morning by reason of the failure of the Comitia Minora to get to work at the appointed time, I move you that the discussion of the reports be postponed until to-morrow morning, and that we now proceed to the election of officers.

Dr. Atkinson: It seems to me a good many members have come to Chicago to attend the Veterinary Association meeting alone. I think much valuable time might be utilized this evening, especially as there is much room for discussion invited in these papers. Therefore I offer as an amendment, that we adjourn until eight o'clock. Seconded.

Secretary Hoskins: We have not arranged for this room to-night, having decided not to hold an evening session.

Dr. Atkinson: I withdraw my motion.

Dr. Williams: We can obtain ample accommodations, without cost, at the Palmer House, if we wish to hold an evening session.

Dr. Atkinson: In view of that statement, I renew my motion, that we adjourn to meet at eight o'clock to-night in the Palmer House.

Seconded by Dr. Butler.

Dr. Williams: I made the suggestion a moment ago, as the manager of the Palmer House had said that he regretted we did not hold our meeting there, as he would cheerfully furnish us a room sufficient for our purpose without cost.

Dr. McLean: With all deference to the gentleman, I would say that some of us have been on the railroad for fifty hours, and I fear we may not be in a condition to appreciate the pleasures of an evening session. We need a little rest.

Dr. Atkinson: I think the members would perhaps rest better in the hall than in the streets of Chicago.

The motion to hold an evening session was lost by a rising vote of eleven for and eighteen against.

The motion of Secretary Hoskins to proceed to the election of officers having been duly seconded, was carried.

Dr. Winchester nominated for President R. S. Huidekoper, of Philadelphia.

Seconded by Dr. Zuill.

On motions to close the nominations for President on a rising vote, there were 22 for and 18 against.

Dr. R. S. Huidekoper was declared duly nominated as President of the Association for the ensuing year.

Dr. W. L. Williams, of Illinois, was nominated by acclamation as Vice-President of the Association, and the nominations for this office was declared closed.

Dr. W. Horace Hoskins was nominated by acclamation as Secretary of the Association for the ensuing year.

Secretary Hoskins: Mr. President and Gentlemen: I have served you now for two years, and the work has grown each year more laborious and important. My professional work at home has also increased, so that I do not feel that I can any longer give the time to the work of the Association which it should receive. I would decline, with thanks, the office which you tender me in favor of anybody else.

Cries of "Question!" "Question!"

The nomination for Secretary was declared closed, Dr. Hoskins being unanimously nominated for that office.

Dr. James L. Robertson was nominated by acclamation to the office of Treasurer.

On motion of Dr. Winchester, duly seconded, the Secretary was directed to cast the ballot of the Association for the election of the officers who have just been nominated.

Secretary Hoskins: In accordance with the authority vested in me, I have cast the ballot of this Association, and the following have been duly elected as officers of the Association for the ensuing year:

For President: Dr. R. S. Huidekoper, of Philadelphia, Pa.

For Vice-President: Dr. W. L. Williams, of Bloomington, Ill.

For Secretary: Dr. W. Horace Hoskins, of Philadelphia, Pa.

For Treasurer: Dr. James L. Robertson, of New York.

President Michener: Gentlemen, it gives me great pleasure to announce to you that you have chosen your officers for the ensuing year, and that you have re-elected to the office of President Dr. Huidekoper, who, we all know, has served the Association well in the past; who, we are sure, has the best interests of the Association at heart, and that he is a man who will probably best represent the Association during the coming year.

I thank you very kindly, gentlemen, for having conferred upon me the honor of being your presiding officer during the past year, and I now very gladly resign in favor of Dr. Huidekoper, who will take the chair.

President Huidekoper: Gentlemen, I certainly thank you for the compliment of my election to this chair. After the address of welcome by Dr. Williams this afternoon, President Michener, in responding to Dr. Williams, said that we had just completed the foundation of the United States Veterinary Medical Association. This Association is to-day holding its twenty-seventh annual meeting. True, it is a very old Association, but, as Associations grow, its progress has not been too slow. For a long time it was, to a great extent, a local organization. The first meetings were held in New York; at that time we held two meetings annually. It was only within the last year that we commenced to go to other cities than Boston or New York; then we held a meeting at Philadelphia, and one in Baltimore. At an early period there was a meeting held at Washington, and a meeting held in Philadelphia, which, however, were accidental. The first meeting attempted to be held in what we sometimes call, the West was convened at Cincinnati, but which, for various reasons, was not a success. Very few men came to



the meeting, and none from the West beyond those doing business in Cincinnati. So this meeting in Chicago is really the first effort that we have made to hold a general meeting in the West. It is only within a short time that we have appreciated the growth of the profession in the West. We were, some years ago, in attendance upon the Cattle Convention here in Chicago, where we met a number of prominent Western veterinarians. Many of the best veterinarians in the East have come here, so that to-day, in meeting in the West, we may say that we have finished the groundwork, the foundation which we have been building for the last twenty-five years, of the U. S. Veterinary Medical Association. We are an organized body to-day, having taken in some forty members, and this meeting makes it, not only in name, but absolutely in practice, the United States Veterinary Medical Association. I am sure from the correspondence I have seen in the hands of the Secretary that he has done an immense amount of work, and has more before him in the future than he has so well performed in the past. I think if you could realize the amount of work that has been done in arranging for this meeting, you would agree with me that we owe him our gratitude. Every man who comes into this Association is a practical man, and cannot but be a benefit to the Association. The young men who have come with us to-day will stimulate the older members to more active work, and in this way the Association should be very successful.

I think there are several things which every member can do to further the general interests of the Association, one of which is to aid in the strengthening of the local organization. In every State, an effort should be made to support the local Association and keep an active society as auxiliary to this Association. A few days ago I attended our State Association meeting at Lancaster, Pa. I made a proposition there that the State Association undertake the formation of local societies throughout the State wherever they have four or more veterinarians in a county, and with these organize a county society. We then made a stipulation to be voted on six months from now, that wherever four veterinarians form a local society, that no one is eligible to the State Association unless a member of the county society. If a man is not fit,

for professional or personal or other reasons, to be associated with practitioners in his own county, he is not desirable as a member of the State Association. I will not take any more of your time. I will give you my best efforts for the success of the Association during the coming year. I think each member can do a great deal to advance the interest in meetings by preparing reports on matters of special interest. It should also be the interest of each member to bring in other reputable veterinarians and strengthen the Association in every way possible.

On motion of Dr. Howe, duly seconded, the meeting adjourned to meet at 9 A.M. September 17th, 1890.

### SECOND DAY.

The meeting was called to order at 10 A.M. Wednesday, 17th, by President Huidekoper.

The following named members responded to the call of the roll by Secretary Hoskins:

Drs. Adair, Atkinson, Barron, Bemis, Butler, Clement, Crago, Dougherty, Wm. Eves, Faust, Faville, Hoskins, Howe, Huidekoper, Lemay, Liautard, Lyford, Marshall, Meyer, Sr., Meyer, Jr., Michener, McLean, R. A., Paquin, Rayner, T. B., Rayner, Jas. B., Robertson, J. L., Salmon, Turner, Trumbower, Weber, Michener, Zuill. New Members: Griffin, Thompson, A. K., Armstrong, Stewart, Carey, Kidd, Williams, Schriber, Kennedy, Baker, S. S., Sayre, Barber, A. H., Hughes, Withers, Walter, Meyer, Jno. S., Piatt, Ronif, Hawkins, Shaw, Hollingsworth, Edwards, Phillips, J., White.

President Huidekoper: The Chair will announce the following committees:

BOARD OF CENSORS.—Dr. W. J. Coates, New York, Chairman; Dr. J. F. Winchester, Mass; Dr. R. A. McLean, N. Y.; Dr. Tait Butler, Iowa; Dr. Thomas B. Rayner, Penn; Dr. C. C. Lyford, Minn.; Dr. William Dougherty, Md.

COMMITTEE ON INTELLIGENCE AND EDUCATION.—Dr. Austin Peters, Chairman, Mass.; Dr. Withers, Ill.; Dr. P. Paquin, Mo.; Dr. N. L. Zuill, Penna.; Dr. Gerald E. Griffin, Ind.

COMMITTEE ON FINANCE.—Dr. Charles Burden, Chairman, N. Y.; Dr. D. J. Dixon, N. J.; Dr. E. C. Ross, Conn.

COMMITTEE ON DISEASES.—Dr. Tait Butler, Ia., Chairman, Dr. Charles B. Michener, N. Y.; Dr. James L. Kidd, Ky.; Dr. James A. Waugh, 6th U. S. Cav.; Dr. George Bridges, Conn.

COMMITTEE ON PRIZES.—Dr. D. E. Salmon, Washington, D.C., Chairman; Dr. Dixon, N. J.; Dr. E. C. Ross, Conn.

SPECIAL COLLEGE COMMITTEE.—Dr. C. C. Lyford, Minn., Chairman; Dr. C. S. Breed, Mass.; Dr. A. W. Clement, Md.

COMMITTEE ON ARMY LEGISLATION.—Dr. W. B. E. Miller, Chairman, N. J.; Dr. D. Lemay, Kan.; Dr. Cooper Curtice, D.C.

COMMITTEE ON PUBLICATION.—Dr. W. Horace Hoskins, Pa., Chairman; Dr. C. J. Goentner, Pa.; Dr. S. E. Weber, Pa.

SPECIAL COMMITTEE TO CONSIDER PLAN FOR CENTRAL VETERINARY BODY.—Dr. C. P. Lyman, Chairman, Mass.; Dr. James L. Robertson, N. Y.; Dr. G. H. Bemis, N. Y.

President Huidekoper: The next order of business is the discussion of committee reports. The first in order will be the discussion of the report of the Committee on Intelligence and Education.

As it appears no one cares to discuss that report I will call upon Dr. Dougherty to submit the report of the Financial Committee.

Dr. William Dougherty, Chairman of the Finance Committee, submitted his report as follows:

We examined the Secretary's papers and vouchers last night and submit the following report:

Collection of initiation fees and dues for year, per statement.....	\$581.50
Expenses during the year, \$544.69, made up of the following items:	
Secretary's expenses, postage, express, etc.....	\$71.34
Appropriation and deficit, 26th annual dinner.....	92.00
Committee expenses.....	121.00
Committee of Arrangements, Chicago meeting.....	16.50
Secretary's salary, one year.....	100.00
Stenographer's charges, Brooklyn meeting.....	15.00
Printing expenses, Publication Committee.....	121.60
To insertion twenty-seven names in certificates.....	6.75
	<u>\$544.69</u>
Balance.....	\$36.61

[Signed] WILLIAM DOUGHERTY, W. L. WILLIAMS.

President Huidekoper: Gentlemen, you have heard the report of the Finance Committee and if there is no objection, the report will be received and approved as read. There being no objection it was so ordered.

#### DISCUSSIONS OF THE REPORTS OF VARIOUS COMMITTEES.

President Huidekoper: The first subject for discussion is the report of the Committee on Diseases.

Dr. Paquin: Mr. Chairman and Gentlemen: It may be that I have not the right conception of what ought to constitute the reports of this Committee. I have thought that one of its chief elements at least ought to be justice. It ought to deal fairly with all the questions it attempts to consider. If it mentions anybody connected with any work, it ought to mention them all equally, or at least tell the whole truth about it.

The report that has been submitted to us on contagious diseases, rather consists chiefly in explanations of what one gentleman has done in investigating Texas fever. A large portion of the many pages in the report refer to the good work done by Dr. Smith at Washington. Every strong point is stated with fairness and exactness, but when it comes to compare that with the work of other men, the report glances over the other work, omits entirely much that is worthy of consideration, and then makes an unfair comparison. I submit, gentlemen, if a comparison is to be made, it ought to be impartial. If there is to be merely a comparison of these investigations of Texas fever they ought to be full and complete of all the work that has been done, and not the opinion of the gentleman who framed the report. I do not understand this Association to be organized for the purpose of discussing one-sided views. I do not understand that reports ought to be based on opinions, but on facts. If I am correct in my opinion, this report should have presented all the facts that have been developed by investigation. I do not object to what has been said concerning the important work of Dr. Smith. It is very important that the investigation he has made be given to this Association; but what I do object to is the unfairness with which comparisons have been made.

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LIAMS.



You may perhaps pardon me for speaking of myself, but in this connection I presume I will have to blow my own horn. Now, we have made some investigations of Texas fever and a bulletin has been published. We do not claim it is perfect, for we know there are many imperfections in it and are satisfied that we will find many more errors, but all these will be corrected. We have attempted, however, to give the facts as we have found them.

Great stress was laid in the report of the Committee on Diseases on the causation of Texas fever or the germs of Texas fever. The judgment or opinion is based on perhaps half a dozen cases. We in Missouri perhaps do not know about much about Texas fever, or in Texas, Arkansas or Indian Territory, where we see only a few cases. No men may be as well informed as the gentleman from Baltimore, where they have seen a few cases in two or three years. But in the Southwest we have this advantage, that when we have cases of Texas fever we can diagnose it whether it is produced by inoculation or come from natural causes. This much is certain, that we know Texas fever when we see it. The gentleman has alluded to our work simply as our claim—that we have simply claimed things that probably are untrue. I do not claim to say that we have absolutely discovered the germ of Texas fever, whether it is bacteria or the precise form of the germs. We have not classified it. We have simply said there is a micro-organism as the causation. These germs have not been found by myself originally, but are the same that were seen by Dr. Salmon himself and described by him some years ago.

It has been said that our work counted for nothing because we sent to Texas and Arkansas and Indian Territory and there gathered specimens. I want to know if it is impossible to gather specimens in that line entirely perfect and clear of any outside influences. It is just as possible to go to Texas with an alcohol lamp and gather bile perfectly pure as it is in the laboratory which is full of floating microbes. It is a possibility. If it is impossible to do that in this country, how is it we can have virus sent from Europe, gathered in the field and not in the laboratory? We cannot have all these cases in the barn. We have got to take them where they are. But suppose it was true that all the work done

in Texas in the field, the specimens sent to us were all impure, what about those cases we have had under our eyes, and watched from the beginning every step of the disease and gathered specimens as pure as it could be done at once? I do not claim absolute perfection, but we have worked with sincerity and with exactness, desiring to be of service to the medical profession, not working for ourselves or for our own glory. We have been honestly striving to clear up some mysteries concerning Texas fever and not trying to create the impression that we were great investigators.

But if we assume that all we have done, so far as the germ itself is concerned, is incorrect, there is still something that should have been noticed if this question was to be considered at all, and that is, some of the questions relating to Texas fever, outside of the germs, outside of the actual causation. I mean to say that there have been points brought out by our investigations that undoubtedly shed more light than ever existed before on this subject of the germ of the disease.

The Chairman of the Committee on Diseases, as I say, has presented a strong point of the gentlemen who have studied Texas fever in Washington and has merely given the weak points of our investigation. He has laid much stress upon his opinion that Texas fever in cattle is similar, if not identical, to malaria in man. If he meant by that that Texas fever is just like malaria in man, or something like it, I believe he is greatly in error. In the first place, malaria in man is not taken from one State to the other. You can go to the Indian Territory or Missouri, where they have malaria and then go to the North, and our children and families do not take it. Texas cattle feeding on infectious ground, taken North, communicate the disease so that native stock exposed to it die from Texas fever. There is certainly this difference so far as the actual nature of the disease is concerned. It may be true that the two germs referred to are somewhat alike, but as to the nature of them and the method of transmission of the disease there is certainly a great difference.

Some statements have been made to this effect which are so vague as to hardly justify a reply.

We have made inoculations with as much care as could be done,

and there are gentlemen in this room to-day who have seen cases of Texas fever produced by inoculation, from native to native, that has produced death. That is a possibility. I have never known such to occur in malaria.

Another point worthy of notice in Texas fever, which was entirely ignored, with a view to casting a reflection on everything we have done, is the agency in which the virus is transmitted from the South to the North. The gentleman has omitted to state that in Dr. Smith's work he says, "I do not know yet in what agency the virus is transmitted to the North, and we are yet in ignorance of that fact." Farmers in the Southwest have known for years that some agency could bring Texas fever to the country. They have known that urine alone could transmit it. They have known that manure alone could do that, and our experiments have simply confirmed this opinion. We do not claim to be the first in that discovery.

Now, gentlemen, I submit to you that if this question was to be brought before this Association it should be discussed fairly; there should be no partiality. I am not alluding to anybody personally, but generally I consider this report unfair to myself, and therefore have made the explanation.

DR. A. W. CLEMENT: Mr. President, as Chairman of this Committee, it has been my endeavor to review the work as impartially as possible from every standpoint.

I happen to have been very much interested lately in malarial diseases. From reading Dr. Smith's report it occurred to me that Texas fever might be closely allied to malaria; and in making this report I laid special stress upon those diseases which I thought might be of miasmatic origin. It was certainly not my intention to be personal in the matter, and I do not think I can justly be accused of such. But every man's print is public property and is liable to criticism. In dealing with these things I have gone into them as closely as possible, but it would take the entire time of this meeting if every detail was to be fully considered. I simply remark that from a review of Dr. Smith's work in connection with malarial diseases, I thought that the germ of Texas fever closely resembled that found in malaria. I do not pretend to de-

fine the difference, as I have not investigated Texas fever myself to any extent. I have seen very little of it and that from a laboratory standpoint.

It was a very disagreeable duty, of course, to criticize the work of Dr. Paquin. I have known him for a long time, and have thought a great deal of him and appreciated his work; but when a man puts into print such opinions as he has advanced, as chairman of this committee I could not overlook it. It certainly is not regarded according to the methods of modern bacteriology to collect specimens in the field and have them carried as far as he has done. It is absolutely impossible, in the opinions of those who are authority on the subject to prevent, the organisms of many varieties. He says in so many words that they have found several organisms in Texas fever, all of which he considers different forms of the same organism. He described bacilli and rods, much longer than they are wide. He describes oval organisms and round organisms and so many varieties which differ essentially from each other, that it seems impossible that they should be in any wise related. He says that he has produced Texas fever by inoculating these organisms, but he does not say what the organism is: That he produced it by inoculating several organisms. For that reason I say that his work is not such as to be considered scientific. He says he has conferred immunity upon cattle by inoculation, but he does not say how he has modified his virus, and in that respect his conclusions are not clear.

I do not know of anything more I can say only that if I have done him an injustice I am sorry, as it was the furthest thing from my mind. As I say, such a work I do not consider to be of any practical value, and I do not know how I can answer it any more definitely.

DR. PAQUIN: If you will allow me one more word. I did not mean that the gentleman intended any personal injury, or anything of the kind.

Dr. Clement has said that it is impossible to carry virus without putrefaction. Of course if you leave it open it is impossible, but suppose you seal it? Suppose you take gall or take the bile, and with a sterilized pipe seal it up before it has any chance of con-



tamination? Cannot that be carried without putrefaction? Certainly it can. We have some two or three years old that is still kept without putrefaction. If the material be gathered perfectly pure before contact with the air and then promptly sealed, it is possible to carry it any distance. And that is the way our material is gathered. This gathering of the material was simply part of our work. We are still experimenting and if any discoveries are made we will state them.

I have not attempted to give any method of modification of the virus, as I have not modified it at all. If a germ of Texas fever is passed through Northern cattle, it will produce fever of the same symptoms as Texas fever, the same effect in the blood corpuscles. It is already modified by nature, and it is not necessary to modify it by any mechanical processes. So it is possible to produce it to some extent, and we can produce immunity for a while simply by virus taken from one of our own cattle suffering from the disease.

On the question of immunity I have one more word. If the disease were of the nature of malaria, how could we explain on that theory the fact that Southern cattle are immutable against Texas fever? How can we explain the fact that the cattle of Texas always exposed to the infectious soil, are immuned? By what possible method do they become immuned? How do they gain that immunity? We take Northern cattle to Texas and within ten days in the summer months they die of Texas fever. We take Texas cattle to Northern pastures and in thirty, forty or fifty days in our pastures they die of fever. But you take the calves born on Texas soil and constantly exposed to this germ, very few die of Texas fever. Take these same cattle North for three months and return them to the South and they will take Texas fever and die from it. If that is the fact, these cattle must have had immunity by some method on the Southern soil which they lost on the Northern soil. After losing it on the Northern soil, they die of Texas fever. That is not an experiment. I have seen it myself time and time again. Now then if this immunity is gained it must be through some kind of virus. I have found that the Southern cows so far as our experiments go are somewhat affected, or at least contain in their blood at some time or other,

a parasite that can be detected by microscopic examination as has been explained by Dr. Smith. It may be outside the blood corpuscles, it may be contained in the liver, in the bile of calves born from those cattle, which calves must naturally be vaccinated from their mothers, when they are born on Southern soil, yet they have been able to resist the germ on the Southern soil. It must be this immunity is conferred by principle, and it is on that principle we have been working. We have been trying to find out by what principle immunity is conferred and if we could find that out it would solve the whole question of Texas fever; and therefore, gentlemen, we have tried to be honest in this matter. Our methods have not been perfect, perhaps; but we have not lost any specimens by putrefaction.

Dr. Salmon: I think in justice to the investigations that have been made in the Bureau of Animal Industry, if not from the point of justice, at least from the point of making an explanation in regard to our work, that it would be proper for me to say a few words at this time, although I shall cover the subject of Texas fever in a paper I expect to read to-day.

I regard it as unfortunate that there should be so much feeling between different investigators in the same field of work. There is room enough for all of us to work and surely enough to be done, and the important question connected with these diseases will be solved none too soon if we all work and strive together to throw what light we can upon the subject. As far as I am concerned, I feel no jealousy in regard to the work of Dr. Paquin or any other investigator, and I should feel great regret if I knew there was any such jealousy in regard to my work, because I appreciate the importance of all working together. We will naturally get some different results, but when we come to put those results together and study them and draw our conclusions we will probably see that each from its standpoint, from his method of work, is able to throw light upon the problem which we all desire so much to understand.

The subject of Texas fever is undoubtedly one of the most difficult problems that investigators in this or any other country have ever attempted to solve. It is a disease peculiar in its character-

istics. It is surrounded with something of a mystery which cannot be understood from our knowledge of other diseases. Therefore when we work upon this disease we are to some extent in the dark. We have not the light of other investigators to lead us in solving the different questions which come up.

Another thing which is important: We claim in our investigation that by cultures which we have made in recent years we have been unable to get any growth, any germ whatever in our cultures. Others claim they have been able to get cultures. The methods are somewhat different. It is for those who look over these investigations and study them, who endeavor to understand the nature of the diseases, one worker get cultures and another cannot. Dr. Paquin spoke of Dr. Smith's work, or Dr. Clement's conclusion from it rather, and he throws out the insinuation that the material which we have had and studied has been very limited. This is a mistake. For four years we have studied that disease during the whole season in which it exists. We have brought cattle to our experimental station from North Carolina, where the Texas fever is prevalent, and we have put them on our experimental stations and have produced as many cases as we could possibly study during one season. We have had another advantage over Dr. Paquin in that we have had more men to help us in this work. We have had several men in the laboratory to keep our cultures—to make our cultures, we have men to make our microscopic examinations, and we have had men at the experimental station to watch the animals and observe symptoms. We have so divided our force as to get as much assistance as possible from the different workers. Therefore I claim we have made as many observations and as carefully as it was possible to make from any one point of work.

Now I want to say a word in regard to germs. Dr. Paquin has been extremely liberal in his remarks in regard to the discovery of the germ of Texas fever, even giving me credit for having discovered the germ years ago, which I described in a report to the Department of Agriculture back in 1880. That was the form of germ which he also described. Now, I must disclaim any credit for the discovery of this germ which I described at that time; and

it can have no possible connection with the germ which Dr. Smith has described. If you will read my report you will remember I do not claim that that germ was the cause of Texas fever and did not at the time I described it. I carried on my work at that time as some of Dr. Paquin's work has been done. I was obliged to work at long distances; I did not have as good a laboratory as I have now; I was obliged to gather my material in the field and seal it up in tubes and carry it some hundreds of miles to my laboratory and there work it out. Our work in Washington has been very different. We have had stations close to the laboratory. We have had every facility for communication between station and laboratory. We have had all the material which we could possibly work, so that I think, as far as the observations of our Bureau go, they have been carried on under conditions which make the results fully trustworthy and as reliable as it is possible for such investigations to be.

Now one word more in regard to the germs. I do not consider it possible that the bacteria, the germs which have been described by Dr. Billings and Dr. Paquin and by myself in early investigations—they certainly were bacteria—I do not consider it possible that those germs can be confused with the micro-organism which Dr. Smith is working on at present. They are found in different locations. The bacteria are cultivated and they do not resemble one another in the least. So, so far as I am concerned, I am ready to say those investigations are entirely different and the germs differ from the germs which Dr. Smith treats of, radically. So I see no reason for any confusion. So we must conclude that the germs discovered by the Bureau of Animal Industry are entirely different from these germs we have been working with.

Now, there is one remark which Dr. Paquin has made which I would like to say a word about. In inoculating from material of dead animals he gets certain results, and in certain cases produces death. Now, the question is, Have you produced the disease which you supposed was contemplated, or have you produced a different disease by the peculiar germs which you have inoculated? This is a point which some of us may not have realized. I know in



my own early investigations of Texas fever, where I got most decided results by inoculation, that these results were not, as I supposed, Texas fever, but they were the result of inoculating with organisms which produced a malignant type of a different disease. So if you are going to diagnose diseases to-day of the nature of Texas fever, you must know what the germ is, and you must be able to recognize the germ when you see it, without the possibility of confusion with other micro-organisms; and then when you examine the liquids or the tissues of the affected animals, you can ascertain positively whether your animal is affected with a particular organism or not. So long as there is confusion in regard to the nature of the germ of Texas fever, so long must there be uncertainty in the diagnosis. When we find this peculiar parasite in the red blood corpuscles of animals, we feel sure that it is diseased. We have not studied any of the diseases of animals in this country in which there is any such micro-organisms found in any such location as that. If there is a germ in the bile as well as in the blood, if there is a germ found in the tissues, in the nature of a bacteria, he is uncertain whether that germ is what I described in 1880, or they are the bacilli or bacteriæ which Dr. Billings discovered—the short bacillus, more lately, or the long bacillus. Then there must be doubt in regard to the diagnosis of the disease, no matter how carefully investigations are made.

At present, when we diagnose a case of Texas fever, there are two points we take into consideration, and we feel sure if we find those points that we are working with one and the same disease: one is the presence of this germ in the red blood corpuscle, and the other is the rapid diminution of the corpuscles themselves. Dr. Paquin is certain, he says, that he can diagnose Texas fever, but he does not tell us how he is certain. He does not describe definitely and distinctly the germ which he asserts he finds in one of the animals affected with Texas fever, and in the young calves as soon as they are born, or before they are born, from Texas mothers. I think that is an important point which Dr. Paquin should have brought out clearly and distinctly if he expects any scientists to accept conclusions of so much importance and so far-reaching as those which he has set forth in his report.

Dr. Paquin also tries to point out weak spots in the conclusion of Dr. Smith that Texas fever is a disease of the nature of malaria. One of his points is that malaria is not transmissible from one point of the country to another, while Texas fever is. Now, I do not think any conclusion should be reached from two facts of that nature. In the first place, a bacterial disease of one kind may be carried to another part of the country and spread among animals of the same species, while another bacterial disease may be carried with greater difficulty, if at all, so that one disease may be carried and another closely allied might not be carried. And we must consider the fact that there is a great difference in the exposure of people as with cattle. We can expose northern cattle to southern cattle if there is simply a little difference between them, and in a great majority of cases they do not take Texas fever. People are exposed to each other in somewhat the same way. Cattle have another method of contracting infection which people do not have. Cattle go upon pastures, and they eat food from the ground which has been soiled by the excretions of southern cattle. There is no possibility of people contracting the germ in this way. So I think that facts of that kind simply support Dr. Smith's conclusion. He does not claim, and I do not claim that the diseases are identical, but that the micro-organisms which causes Texas fever are closely allied to those found in malaria. Now, just one other point to which I ask your attention for a moment. Dr. Paquin says Dr. Smith is not certain how the disease is conveyed from southern to northern animals. Dr. Smith states this in his report. He says the farmers of the country are certain how the disease is transmitted from one animal to the other; that they know these germs are, and that they may be, transmitted by the manure and by the urine. I doubt if we can accept such conclusions as that. How do they know it when those who have investigated the subject are not able to tell certainly? I do not believe any man—I do not believe Dr. Paquin can get up here and say he is sure that the disease is transmitted to southern cattle through the medium of the manure scattered on the pastures. I do not believe he can point to any positive evidence where Texas fever is spread by means of the urine and manure cast upon the

soil. That question is obscure, upon which we have no definite evidence that I have seen, and which, I think, we can very well leave to be decided by investigation in the future, rather than jump at conclusions before we have evidence on hand to justify them.

Dr. Paquin: Just another word. I am glad to see the spirit of discussion, as it is exactly what I wanted. I will reply to Dr. Salmon's last question by stating two experiments, or two series of experiments with urine and with manure. Pens of about twelve feet square and six feet high, where there had been no Texas cattle at any time, were prepared. On the grass of those pens was spread manure in some of them and infected urine in the other. We exposed northern cattle to that grass, and we produced Texas fever. We had not only one case, but several cases from the two different pens, and from the two different kinds of infection.

Dr. Salmon: Let me interrupt you just a moment. What the doctor stated before was that the farmers of Missouri had been perfectly certain for years that the disease was produced by manure and urine.

Dr. Paquin: I said that they were sure there was some method of transmission. As to the inoculation and the diagnosis of the disease, I beg to say this, that it is possible take a spleen or a liver of a diseased animal suffering from Texas fever, make a fluid of it, and inoculate another northern animal, and produce the disease, and in the blood corpuscles you will find the organisms as Dr. Smith has stated.

Dr. Clement: I would like to say a word. The basis upon which I criticised Dr. Paquin's work, as I said before, is the fact that he found so many germs which he considers as the cause of Texas fever. There must be one germ. You cannot have Texas fever caused by several different organisms. Dr. Paquin says: "Some of these bodies appear almost spherically; others, like bright specks, and others like oval bodies." He says the germs were found in the blood and bile frequently. Now, he says this blood can be taken and carried perfectly pure. The fact that he found so many different germs in his blood and bile is very conclusive evidence that it cannot be carried perfectly pure.

Dr. Paquin: Do I say so many different germs, on different forms during the growth?

Dr. Clement: In another place you say you classify them.

Dr. Paquin: I do not say I classify the germs.

Dr. Clement: You cannot have a disease, producing virus of several different forms and call one bacillus and leave the rest unclassified. That is the basis upon which I made my criticism.

Dr. Salmon: Just one word. I do not know that Dr. Clement has any means of knowing exactly what Dr. Paquin has seen except from his report. It may be Dr. Paquin is unfortunate in the way his report is written. Certainly from reading that report I can find nothing that would lead me to suppose that the doctor ever saw a micro-organism in a blood corpuscle such as Dr. Smith described. He does speak of its being found, but he does not give a description of it. He speaks of it being an oval germ. So from reading his report the only conclusion I could reach was that the germ which he studied was bacteria. I do not see how it would be possible for him to study this germ of ours in the red blood corpuscle. It is only by the peculiar appearance of this germ in the red blood corpuscle that we are able positively to distinguish it. After reading this report of Dr. Paquin's I certainly reached very definite and positive conclusions in my own mind as to what he had seen. I do not see how it is possible for him to have studied the germ which exists only in the red corpuscles. I do not see how it is possible that he should have described the germ which is found also in the bile and other places where there are no red blood corpuscles. We only pretend to recognize the germ when we find it in the red corpuscles.

Dr. Griffin: If I inoculate an animal with the germ and it gets a disease, would it be in the urine?

Dr. Salmon: It is a question of the recognition of the germ. Without a description of the germ, we do not know what investigators have been working at.

Dr. Adair: If the germ that causes the disease is only in the red corpuscles and not in the urine, and you inoculate with the urine and produce Texas fever and the post-mortem shows the symptoms, do I understand the germ would be discovered and the disease diagnosed by the red blood corpuscle?

Dr. Salmon: What I said was, I could not undertake to recognize the germ outside of the red blood corpuscle because of the peculiar characteristics of it. We think it cannot be seen outside of it. I do not say it is not in the urine and in the bile, but I do say that the gentlemen who have studied it in the West have not given us any definite description of it so that we could recognize it outside of the blood corpuscles. It may be that they have produced the disease in the way they say, but I question the diagnosis. How do you know? What were the germs which you produced? Give us a definite description of them, and then we will accept your conclusion. Until you do this we must proceed to further investigation, and at least conclude that the subject is in doubt.

Dr. Hawkins: Before closing this discussion, I would like to know whether the germ of this disease is destroyed entirely by the cold weather. Several years ago, while practicing in Canada, we had Texas fever in a herd that was brought in there by some cattle that had been unloaded on account of an accident. The next season we had a breaking out of Texas fever on the same farm, but not having any Texas cattle or any that had come in contact with Texas cattle on the place that season, it seemed strange. I have understood that the cold weather would destroy this germ.

Dr. Adair: What time of the year was this accident?

Dr. Hawkins: The latter part of August or the fore part of September. The fever broke out the next year about the same time.

Dr. Winchester: If the subject of Texas fever has been thoroughly discussed I would like to make a statement in regard to tuberculosis. If my memory serves me right, at the conference at Berlin last month Dr. Koch made a statement that he thought he had found something that controlled the action of the bacillus of tuberculosis in animals, and also that something was written and put in a sealed letter given to the Academy of Medicine, at Paris, some twelve months before Koch made that statement, by two Frenchmen whose names I do not recall. I only make the statement to show that the same investigation had been held and the



same results produced twelve months previous to Koch's making his statement in regard to that, held in abeyance the activity of the virus.

Dr. Liautard: I may add to that statement made by Dr. Winchester that in the statement made before the Academy of Medicine in Paris, it is claimed that by inoculation they had so far obtained these results that animals which had been inoculated with the strongest virus of tuberculosis, had been kept after the inoculation for a number of months free from the disease, while others which were vaccinated had died in a very short time.

Dr. Salmon: I think these gentlemen were working on entirely different subjects. It seems to me what I have seen of the article, although they are both written in such a way as to mystify, that Dr. Koch had been working in one direction and the French have been working with some substance to produce immunity. I judge that they had been working with some materials in which the bacilli had grown, while Koch states in his paper that he has discovered a substance which, given to the animal, prevents the further growth of the germ in its tissues. All the indications are that these investigators have been working on different lines. Most of them have failed in producing what they claim to at present, but their investigations will be of benefit to the medical world.

Dr. Clement: In quoting from the article, I simply made the statement that Dr. Koch said he had found the substance. He did not describe it and he was not prepared to say just at present what it was.

President Huidekoper: The next subject for discussion is the report of the Special College Committee.

Dr. Lyford: I will say that I have received another letter from the New York College, in which they report progress. I might say that I have received letters from all the colleges except the Chicago College, and each of them so far are not only willing but apparently glad to enter into the three years course, and none of them find fault with the preliminary examination. Thus far the reports are quite encouraging. I have not made a report of the agricultural schools, or consulted them, as I thought that would

be of secondary consideration, as most of them are hardly prepared for such a course. I have thought if we first succeeded with the regular veterinary colleges, we could probably work the others in easier. I should be very glad to hear from the other schools; and as we have Professor Liautard's report and as he himself is present, we will probably get some new idea from him as to his work in this line.

Dr. Liautard: Mr. President and Gentlemen: This is a very important question. The fact that it has been brought before the Association for a number of years shows its importance. It has made some progress, although it has been slow; undoubtedly a good deal will be developed in time. There is no doubt but that a long course of study is a necessity and that it will impose itself as veterinary science progresses in this country. I will say this, that the requirements for admission, matriculation, etc., were initiated by the American Veterinary College, being the first institution in this country which required it. From the moment this institution was opened we required a matriculation examination, because we felt that our men are engaged in scientific professional work. It was necessary that we should have everything as clean as possible. What was the condition of matriculation previous to 1875 in the veterinary school? Why, a gentleman came in, paid his fee, looked at us for a short while, unable to follow our lectures, unable to follow the progress he was making, unable to take notes, or perhaps in some cases unable to write them. He remained a little while, went away and concluded we had robbed him of his fee. We could not refuse him. He had complied with the requirements, merely paying his fee and yet we know we were not doing justice to that class of men. Then we started this matriculation examination as I say, the first one I believe in the country in a veterinary college, and I am strongly inclined to believe the first in any medical college in the State of New York. We started it so that the student might be able to appreciate the course of instruction and be benefited by it. This preliminary example is simple; it is not probably what it ought to be. It is not yet up to the standard of some of the other schools, but probably will come there.

As to the question of a three years' course, I believe we are to consider the fact that at first there was not a veterinary high school in this country. The most important point was to try and displace the ignorant man with good practitioners and give those men a good foundation—what might be called a veterinary A. B. C. for their own personal benefit. It is for this reason that the American Veterinary College stuck to those requirements. We have inaugurated a change, as you have been told by Dr. Lyford. We have lengthened our course from four and a half to six months. We have not yet reached the three years' session at college, but we have required a more lengthened course of study—three years. The day will come, I believe, when it will not be a question of ordinary attendance in school, but rather one of the thorough education of those students who are to come to our schools. I can say as a result that the students in our colleges to-day are better educated than those in the past. The students feel that by a long course of lectures they are benefited and rendered competent for the discharge of practical duties.

As to the question of examination, it is one that will have to be considered by and by. I am certainly not in favor of an examination by each individual school. Already, as I wrote Dr. Lyford, although he has probably not yet received my letter, I have considered the subject of a general board of examiners as a very important step. I have considered the subject also in some of our meetings and I am strongly in favor of a board of examiners, but I must say if we are to gain any benefit by a board of examiners, we must so arrange it that the individual school would not be tempted in the matter, and therefore if that board of examiners is to be established, it should be under the control of this National Association, representing every part of the country, and in this way I think we could accomplish much good. Let your examinations be careful and impartial to every one of the candidates, whether from the Eastern or Western colleges. (Applause.)

President Huidekeper: We will now take up the discussion of the report of the Committee on Army Legislation.

Dr. Griffin: Mr. President: I take this opportunity on behalf of the majority of the army veterinarians to thank the committee

for their work in our behalf. The report mentions the fact that the plan meets with opposition from members within the service. This must be expected where we have three men who are not graduates of veterinary colleges, and who upon the passage of a bill creating the corps, and compelling the members of the present force to pass an examination, would be thrown out of their employment. Those three men are strongly opposed to any reform. I am sorry to say also that there is at least one other man who is a graduate of a very reputable veterinary college, graduating some ten years ago, and supposed to be a man well educated, yet who fears that in case of an examination he would not be able to pass. This man is exerting all his influence to obstruct progress of your committee on army legislation. There are only fourteen of us altogether in the service, and out of this number I believe there are about six who would fail in the examination, and those men of course oppose any bill that tends to reform the service.

The inducements for entering the army are not great, which is the reason why we have such a poor class of men in it. This is the state of affairs and shows you where the opposition comes from. I think it is certain that the competent men in the service, who are not afraid of an examination, will lend all their aid in support of the action of your committee; and, as I remarked, it is on behalf of these men that I tendered the thanks of the majority for the efforts of your committee in our behalf.

#### READING OF PAPERS.

President Huidekoper: We will now receive the paper of Dr. D. E. Salmon.

Dr. D. E. Salmon, Chief of the Bureau of Animal Industry, Washington, D. C., presented his paper on "Some of the Last Studies on Bacteriology, as it refers to the Domesticated Animals and the Diseases in them."

#### SOME RECENT RESEARCHES IN THE DISEASES OF THE DOMESTICATED ANIMALS.

BY D. E. SALMON, D. V. M.

It is not an easy thing to thoroughly investigate a germ disease, nor is it a task that can be accomplished even with the best facilities by a few weeks or a few months of work. It is fourteen years since Koch gave bacteriology a place



among the sciences by his brilliant researches, which demonstrated the pathogenic relations of the *Bacillus anthracis* to the disease which we know as anthrax, and yet, in spite of the utmost activity in this field of work since that time, there are still many communicable diseases of the cause of which we are still in complete ignorance. To illustrate this it is only necessary to mention the fact that the cause of such common diseases as small-pox and cow-pox is still shrouded in mystery notwithstanding the ease with which material for study can be obtained, and in spite of the large reward offered by the Grocers' Company for a successful method for artificially cultivating the vaccine virus.

Unfortunately the greater part of the bacteriological researches which are published for the enlightenment of the world are absolutely valueless, and are a check to progress rather than an aid to it, because some one must disprove the conclusions which follow from them, and, even then, other workers must remain in doubt as to which observer was correct. The study of too small a number of cases, the failure to use a sufficient number of experimental animals, the neglect of scientific methods, the lack of proper facilities for work, are among the most common causes of failure in bacteriological research. The most complete and thorough study of a single case of disease is not sufficient to enable any man to write a description of the typical symptoms and lesions of that malady. Individual cases in the same outbreak differ from each other in a surprising degree, while the type of one outbreak may differ very materially from that of another. These facts are well known, and for that reason the clinical history and pathological anatomy of any given disease cannot be considered reliable until many individual cases and a considerable number of epidemics or epizootics have been studied.

If this is true of the more superficial and easily observed characters, how much more is it to be remembered in connection with the obscure problems relating to the pathogenic germs, their morphology, physiology, life history, susceptibility to germicides, their effects upon the animal body in which they are multiplying, and the toxic products which are developed during their growth. These are questions which require long observation, a division of labor among competent assistants, many experiments, proper experimental grounds and laboratories, and every possible precaution to avoid errors and many hasty generalizations. In speaking to you, therefore, of the recent bacteriological work of the Bureau of Animal Industry, I hope you will not anticipate any startling novelty which has been wrenched from nature's tenacious grasp within the last week or two, and which is destined to revolutionize or blot out all that we thought had been built up in the past. Such wonderful discoveries are few and far between, and when investigators claim them the chances are that they are mistaken. My purpose is rather to point out results which we have reached by gradual and careful advances during years of patient work; and while such a plan on my part may debar me from introducing those sensational features which make much of our modern science resemble a fairy tale in more respects than one, I feel sure that there are some advantages in dealing with conclusions which are reasonably well founded upon carefully observed facts.

Realizing the impossibility of thorough work being done by any one man in so difficult and complicated a field, it has been my constant endeavor to divide



the investigations so that each branch may be in the hands of a specialist. Thus it is the duty of one veterinarian in the Bureau to secure proper animals for experiment, to take charge of such animals during the experiments, take their temperature, observe their symptoms and see that there is no chance of contagion from lot to lot. Another man with from three to five assistants has general charge of the investigations, makes the cultures, prepares the material for inoculation, studies the germs and the pathology of the disease, and decides what experiments are necessary to elucidate these points. The chemical investigations are carried out by a competent chemist, and an artist is always ready to make illustrations of the pathological appearances or of the germs, while still another person is prepared to photograph such specimens as must be delineated with absolute correctness. In addition to this we have men to collect material and observe outbreaks in the field, so that our experimental work will not suffer by constant interruption. If one man undertakes to carry on all of these duties his time is broken up, his experimental animals are neglected, and his experiments themselves interrupted. This accounts for much of the poor work that is being done, and shows the necessity of at least one place in the country where investigations are carried on with every facility in the way of experimental grounds, laboratories, men and money to give reliable results.

In working for the development of such an institution as this at Washington my chief object has been to show what services the veterinary profession can render to the country and to the world, and in doing this to incidentally furnish the means for protecting our animals from disease, and the facts for a more substantial, complete and scientific foundation for veterinary practice. In carrying out this plan I have had the cordial cooperation and assistance of the profession, and I take the opportunity to return thanks for this unfaltering support and to express the hope that our labors may be so performed as to merit a continuance of a like good will in the future.

The chief part of our scientific work has been for so long a time devoted to swine diseases that it is impossible to omit a consideration of them in a paper of this kind. You are aware that we have described two diseases caused by two distinct germs. These germs can be easily distinguished from each other, but we are now satisfied that the diseases can only be safely diagnosed by determining which germ is present. Different outbreaks of swine plague differ greatly in the lesions presented. Sometimes these are confined to the lungs, as in the first cases we studied; often, however the intestines are affected, and the appearances presented may then so closely resemble those seen in hog cholera that the most practiced eye cannot decide which germ is responsible for the mischief. It is then only by a bacteriological examination that an accurate diagnosis can be made.

These diseases, though frequently both are present in the same herd, are often found each by itself producing ravages without the aid of the other. In a very destructive outbreak studied during the present summer in New Jersey, the most careful bacteriological examination revealed only the swine-plague germ. Some of the animals from this outbreak were taken to our experiment station and placed in an enclosure with other pigs, and the disease was commu-

nicated to the latter by cohabitation. There is, consequently, no doubt about swine-plague being a communicable disease—one that can be transmitted by inoculation and by cohabitation.

Its relative distribution and prevalence, as compared with hog cholera, are questions that remain to be answered. If the lesions were always so characteristic that a diagnosis could be made by an ordinary post-mortem examination, it would be an easy thing to put a force of men in the field and determine them in a single season, but so long as a bacteriological study must be made of each case it, of course, requires a much longer time to obtain satisfactory results. My first impression was that swine-plague was of much less importance from an economical point of view than hog cholera, but our recent investigations have modified these views, and have indicated that the former disease may be as prevalent and cause as heavy losses as the latter.

The great aim in bacteriological investigation, as in all other branches of medical science, is to discover the means of preventing or curing diseases. The discovery of the microbe, and the study of its life history, are but steps in the accomplishment of this object. We have, therefore, from the first endeavored to bring out such facts as would enable us to form a science for the prevention of germ diseases.

It was once my good fortune to listen to a series of lectures by that great naturalist, Louis Agassiz, and I was deeply impressed with a statement of his, that Nature held her secrets with so tight a grasp that an investigator might consider his life successful if during the whole course of it he had been able to discover and contribute to science but a single new principle. He, himself, after a life of almost unparalleled activity in scientific research, laid stress upon but one such discovery, although he had contributed an enormous mass of facts. In our investigations we have discovered two such principles, which have been and are destined to be of very great value to sanitary science.

The first of these principles is that with nearly all diseases the most susceptible animals have a certain power of resisting germs of the greatest virulence. Or, putting the same idea in other words, we may say that, by diminishing the dose of virus, we reach a point where a considerable number of germs may be introduced into the tissues without being able to cause disease. The second great principle is that with non-recurrent diseases the germs produce during their cultivation outside of the animal body certain chemical substances which, when administered to susceptible animals, grant immunity from the effects of that germ. These principles, discovered and demonstrated in the course of the investigations under our Department of Agriculture, promise to be of more value to sanitary science than all the other principles which the combined workers of the world have contributed to bacteriology since Koch demonstrated the germ theory of disease.

The easy, safe, and certain production of immunity in animals exposed to contagion would be a most powerful weapon for the control of germ diseases, and, consequently, our investigations have been for years turned in this direction. We have tried the Pasteur method of vaccination, using attenuated virus or vaccine; we have tried inoculation on the principle discovered by us of producing the desired effect by means of graduated doses of strong virus, and we

are now experimenting with the chemical substances produced during the growth of the microbes. We have found that vaccination and inoculation, as applied in hog cholera, are uncertain and insufficient in results, and have certain disadvantages which make these methods of little value for the prevention of this disease. We turn, therefore, to the method of prevention by means of the chemical substances formed during bacterial multiplication.

This question is one of the most difficult ones to study that has confronted the bacteriologist. When we first demonstrated the principle we found that the culture liquid, when freed from living germs, had the power of conferring immunity when injected into the tissues. But this very discovery suggested a host of questions which must be answered before the method could be of practical use. The culture liquid, considered chemically, is a complex substance. Which of its constituents has this wonderful power? What are its properties? How can it be separated from the useless matter with which it is combined? Is it a single alkaloidal substance, or does the result depend on two or more of these combined? At what period of bacterial growth is it most abundant? Will it produce the desired effect when administered in other ways than by hypodermic injection? What is the dose required to produce satisfactory immunity in the hog, and how often, and at what intervals must this dose be repeated? These are some of the most important questions which pressed themselves upon us for solution; and when we attempted to solve them we found other questions of a secondary interest which we were compelled to grapple with and solve before the others could be undertaken.

We had no test for this mysterious and hidden substance, no way to recognize its presence, except its effect in the production of immunity, and this test it required weeks to make, and even then the experiments were liable to fail. How much more patience and skill does such an investigation require than the ordinary chemical methods where a re-agent is added to a solution, and the immediately formed precipitation shows the presence of the sought-for constituent! Our first experiments were made with pigeons, and while they served to demonstrate the principle, we soon found, to use chemical language, that the reaction with them was not a sufficiently delicate one to enable us to solve, without great loss of time, the other questions that came before us. The difficulty was, that pigeons are not easily killed by the hog cholera germ, especially in summer, and, consequently, after we had treated some to produce immunity, and afterwards inoculated them, together with other pigeons, to test their comparative resistance, none of the inoculated birds would die, the untreated ones resisting, as well as those that had received treatment. Such an experiment was, of course, a failure, and must be repeated.

In short, it was necessary for us to select an animal to experiment with that in its natural condition of resistance would always die when inoculated with a moderate dose of virus, but which, with a slight addition to its natural power of resistance, would always recover from such an inoculation. The pig was out of the question—its resistance to virus is too variable and the possibility of producing immunity too doubtful. After considerable experimentation we found the guinea pig to answer these conditions to our satisfaction. It was here that our first discovered principle came to our assistance. We so graduated the dose

of strong virus used in our tests that we gave just sufficient to produce death in the natural condition of resistance. Our guinea pigs might then be compared to the chemist's reagent, which is just faintly alkaline. He dips in it the litmus paper and it remains blue, but let him add but a single drop of acid and then touch it with the litmus paper and the red color at once reveals the acidity. So with the guinea pigs—inoculate them with our standard dose of virus and they invariably die, but add only slightly to their power of resistance and all will live. I cannot go into full details of our experiments in this paper, in fact they are still in progress, but I have already given you an idea of our greatest difficulty and how we overcame it.

Another difficulty was to get the material for producing immunity in a sufficiently concentrated form so that a large enough dose could be given hypodermically. The culture liquid contains such a small proportion of it, and the dose of liquid injected must, consequently, be so large that it could not well be given to small animals hypodermically. We tried first to inject it in sufficient quantity in the abdominal cavity, but it is so irritating in its properties so as to frequently produce peritonitis and death. We also tried to condense the liquid by evaporation, but our substance was either volatile or destroyed by the heat, for our condensed liquids did not show a corresponding increase in the power of conferring immunity. At this stage of the investigation we added a chemist to our force, and have since learned not only how to condense our culture liquids without destroying their properties, but we have separated the chemical constituents and decided which are concerned in the production of immunity. There are many details which must still be worked out before the method can be practically applied to swine, or before we know that hog cholera can be practically prevented by this means. The most difficult questions of the investigation, however, are solved, and what remains is a matter of details. These statements are made because this is the most interesting line of bacteriological work now engaging the attention of scientists, and I know that you will be interested in learning something of the great problems before us and how we have solved them.

We will now turn our attention for a few minutes to the subject of Texas fever. While this disease, as you know, is allied by its characters to the bacterial fevers, it has certain marked peculiarities which have caused it to be regarded as the most mysterious malady which remains for modern science to investigate. For four years we have been giving the disease very close attention and study, and our results have been unexpected to ourselves and so different from those reached by other investigators that we have not pressed our conclusions until we had taken every precaution to confirm them.

I am prepared now to say that Texas fever is not a bacterial disease. There are no peculiar bacteria to be found in the blood, spleen, liver or other organs; and as a rule the blood and tissue are free from even the common septic bacteria when examined immediately after the death of the affected animals. All the illustrations which have been published showing preparations of blood from Texas fever animals swarming with bacteria, and sections of the tissues showing the same micro-organisms are misleading, and may be put aside as of no value to the student of this disease. The blood and tissues do not present such appearances when properly examined.



Texas fever belongs to the malarial type of diseases. The germ resembles the malarial organisms of Laveran. It is found within the red corpuscles of the blood and may be demonstrated in them before the death of the animal. We have not been able to cultivate it, and do not believe that it can be cultivated by any of the methods now in use by bacteriologists.

We have studied outbreaks that were caused by cattle from the tide water section of Virginia, from North Carolina and from Texas, and in every case we have found the same micro-organism present in the blood. In some cases almost every corpuscle would be invaded. These parasites rapidly destroy the corpuscles and the number of these soon falls to one-half, one-third, one-fourth, or even one-fifth of what is found in health. This destruction of the corpuscles of course accounts for the excretion of the red coloring matter in the urine.

The possibility of the infection of pastures by ticks has also been demonstrated. For two years we have picked the ticks from Southern cattle and scattered them over experimental pastures, and we have found that susceptible cattle would contract the fever from these pastures as readily as from those upon which the Southern cattle themselves had been placed. It is a fact, therefore, that ticks may infect pastures without the presence of Southern cattle. Whether the Southern cattle can infect pastures without the presence of ticks is still an open question. We had an experiment planned to settle this problem the present summer, but it failed by the unexpected appearance of the ticks upon this lot of cattle which we had supposed were protected from them.

The main results of our Texas fever investigations may therefore be summed up as follows:

Texas fever belongs to the malarial group of diseases.

It is caused by small micro-organisms which are found in the red blood corpuscles, and which are not bacteria, but bodies of the nature of malarial germs of Laveran.

Pastures may be infected by ticks from the bodies of Southern cattle.

While this is only a beginning of the work necessary to elucidate the many interesting and important questions connected with Texas fever, it gives us a solid foundation from which to build, and indicates the direction in which future researches must be made in order to secure successful results.

The paper of Dr. Salmon was illustrated by numerous enlarged views of different germs, cast upon the canvas, the diameters of the germs being multiplied thirty thousand times and their peculiarities pointed out and explained in detail by Dr. Salmon during the course of his lecture. Among others was a specimen from gelatine culture, one day old; hog cholera germs; the same germs from a gelatine culture fifteen days old; the same germ from a liquid culture, one day old; a germ described by scientific men as the swine plague germ; the swine plague germ obtained by inoculation; a hog cholera germ with an original stain; a preparation from an animal afflicted with Texas fever; a preparation of hog



blood; a preparation made from blood before the death of the animal, showing double germs of diamond shape, found in Texas fever and malaria; a preparation made from the kidney of an affected animal; a preparation from the kidney of an affected animal, showing the same thing with larger germs, and showing where the germs are to be found; a preparation made from the spleen, which showed about the same as the last illustration; a preparation made from the spleen, from a different animal; an affected blood corpuscle, showing the different forms of germs with two pear-shaped parasites in it.

Dr. Salmon also exhibited views of several places where the Board had had difficulty in ridding the locality of pleuro-pneumonia, showing adjacent pools of stagnant water, dilapidated buildings in Brooklyn in some cases where the pool of water had its course under the buildings. Pleuro-pneumonia could only be obliterated in such a case by the utter destruction of the buildings, the digging up of the ground, and a thorough disinfection of the soil.

President Huidekoper: I think, gentlemen, you will all agree that Dr. Salmon's paper is too important to be discussed hastily, and therefore a motion to adjourn will be in order.

On motion, duly seconded, the Association adjourned to meet at 1:30 P.M.

#### AFTERNOON SESSION.

The meeting was called to order with President Huidekoper in the Chair.

Vice-President Williams took the Chair and Dr. Huidekoper read the following paper:

#### CONTRACTION OF THE HORSE'S FOOT.

BY RUSH SHIPPEN HUIDEKOPER, M.D., VETERINARIAN.

Syn.—*Zwanghuf*, German; *Encastelure*, French; *Incastellatura*, Italian; *Enca-tenadura*, Spanish; *Hoof-bound*; *Contracted Heels*, English.

The aphorism of "no foot, no horse," has been used for years in such a general way, conveying so many varied ideas to the hearer, that it has become sententious for the veterinarian to use it to the outside world; it is too accustomed to its daily reiteration from quack farriers and conceited horsemen who have personal theories, each of their own, which, having been derived from some dis-

covery in regard to a horse's foot and resulted in benefit to *that* horse, is supposed and claimed to be applicable to *all* horses' feet. They know that the horse's foot is more or less intricate in its structure, but look on it as an important article much as they would upon a patent collar or toe weight, which has given a good result in one case, and therefore they suppose it should in all. Before comparative anatomists and practical veterinarians, however, no apology is needed for reviewing their knowledge of the foot, or adding any detail, however small, to it.

The anatomist, who might have been a Darwin or a Leidy of his race ages ago, when the four-footed animals first came upon the earth, could certainly never have conceived that the free-moving ten bones of the carpus or tarsus, and the multiple digits of the animals of their day, could be diminished to a single toe, and it serve as a useful member, finding support only by its distal extremity. We, as practitioners, are too apt to overlook the importance which the remnants of the evolution in the horse's foot bears on its practical troubles and diseases, and we too often fall into the habit of regarding the feet of one horse as structures identical with those of another, which they are not.

For convenience in this paper, the word foot will be used, as meaning the "surgical foot," from the second phalanx and coronary band down, and will be qualified as the anatomical foot, if it is so meant. While the elements of the feet are the same in all the solipeds, it is important to review some of the anatomical and physiological peculiarities which allow the shape of a thoroughbred's foot to appear like a cylinder, while that of a Clydesdale has the conformation of a flat cone.

Comparing the two third phalanges, it is seen that the transverse diameter of one from a flat-footed horse is much greater in relation to its antero-posterior and supero-inferior diameter, that the concavity of the plantar surface is much less, and that the basilar and retrossal processes stand out at an angle from the median line of the bone instead of lying almost parallel to it, as they do in the bone from a mule-footed horse. In the flat foot the articulation of the third phalanx with the second phalanx above is more shallow, and consequently admits of a greater amount of lateral motion between the two bones. The difference between the navicular bones of the two feet is only one of accommodation, except that in the flat foot the navicular is closer to the plantar surface and has greater freedom of movement. We recognize that the ligaments of flat feet have greater surface of attachment, and in the lymphatic animal are less dense and more extensible, thereby allowing a greater freedom of movement, but predisposing to a greater amount of bone irritation if they are wrenched at their origin on the bone. The plantar cushion of the flat foot is larger in proportion to the size of the foot than in the high-heeled foot, as in the former there is a greater divergence of the wings from the median line of the pedal bone. The walls accommodate themselves to the difference of relationship of the internal parts. The flat foot, in profile, is seen truncated at a more acute angle. The greater and wider frog sunk at the glomes of the heels nearer the ground renders in some cases the entire posterior part of the foot a soft cushion, holding up both quarters and bar, whereas, in feet of the opposite conformation, these latter must be considered as the important factors in the movement of the heels, while the frog plays a secondary part, acting as a passive support. In any horse the fore and

hind feet differ slightly, the former always approaching more to the type of the flat foot, while the hind ones resemble more those of the high-heeled foot.

For the purpose of this paper, the physiology of the foot may be reduced to the recognition of a solid bony centre (second and third phalanx and navicular bone) with elastic lateral wings (lateral fibro-cartilages) surrounded by a vascular network admitting of moderate movement (*rete processigerum*, *rete plantarum*, and synovials of the flexor tendons) which rest on an elastic cushion, and are enveloped in a dense keratogenous box (wall, sole and frog) which plays only a passive part in the functional activity of the whole. The internal parts are rich in nutrient blood-vessels, and are luxuriant in nerves (tactile, general sensation and trophic).

The keratogenous covering should be dense and firm, to resist friction, and moist and pliable, to accommodate itself to alterations of pressure.

The elasticity and distensibility of the horse's foot was recognized by Solley-sel, and was made the object of special study by Bracy-Clark, Coleman, Geoag and Bouley, all of whom left information of value.

Professor J. Lechner, of Vienna,\* was one of the leaders in the study of the relative movements of the various parts of the foot, and he formulated a theory that, when pressure is placed on the foot from above, there is a dilatation of the coronary portion with a retraction of the plantar edge of the heels, producing a rotation of the posterior extremity of the walls. Professor Lechner employed in his experiments several instruments, one of the most ingenious of which was an electric current and bell. (Fig. 1). A rod (*a*) fastened to the toe of the

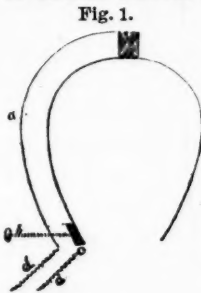


Fig. 1.

horse's foot, as this is the most fixed point, follows the line of the wall to the heel and holds a pin (*b*) which can be screwed in and out; the latter faces a piece of zinc set in the quarter (*c*); from the pin and zinc (*b* and *c*) wires (*dd*), extend to a bell. When weight is placed on the foot and the heels expand, communication is established between zinc and pin, and, the current connected, notice is given of it by the bell. The amount of expansion could be determined by a graduation on the pin. Professor Lechner's paper elicited considerable controversy, and his work was followed by numerous experi-

ments and studies by others.

Lungwitz and Schaaf, by means of an ectasimeter of their own, arrived at the following conclusions:

- 1st. The raised foot is smaller at the plantar surface than it is when upon the ground.
- 2d. Dilatation of the plantar border augments with the velocity of the gait.
- 3d. The inside heel dilates more than the outside one.
- 4th. The heels of the hind feet dilate less than those of the fore feet in the same horse.
- 5th. The coronary band dilates at the same time as the plantar border.
- 6th. Healthy or diseased feet dilate above, under pressure.

\*Neber Hufrotation. Vortrag gehalten in der Section XI (Veterinarkunde) der 54 versammlung deutsche Naturforscher und Ärzte zu Salzburg, 1881.

7th. The dilatation of the posterior part of the foot causes a shortening of the foot. (Fig. 2).

8th. The dilatation of the plantar part of the hoof varies with the form of the foot. In angular, narrow feet it increases toward the quarters and diminishes toward the heels.

9th. Normal dilatation is not complete in shod feet.

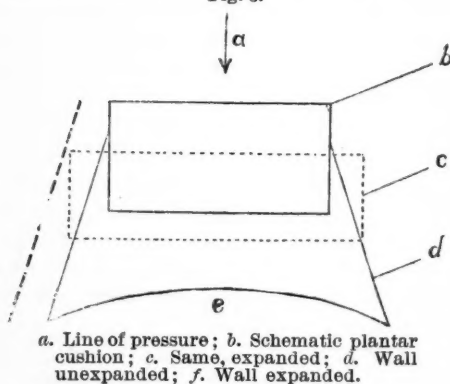
10th. Suppleness of the horn and integrity of the frog are necessary for normal and complete dilatation of the foot.

11th. Shoeing and dryness of the horn interfere with the movements of the foot.

12th. In contracted heels there is a certain dilatation of the quarters, but the heels not only do not take part in the dilatation, but, on the contrary, retract slightly.

Prof. Bayer, of Vienna, Martinak, of Prague, by means of a circular compass, and Dr. Schwentsky obtained about the same results.

Fig. 3.



and the convex upper surface of the sole, as in the experiments of Steglich.

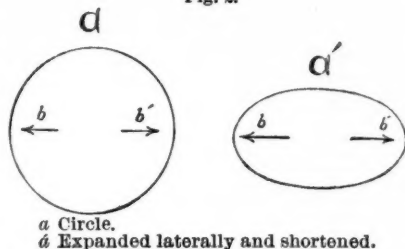
Dominick, by experiments on the dead foot, arrived at the same conclusions.

Foringer carried out his investigations by applying a solid shoe having vertical arms on its branches, which held movable screws; his experiments were performed on the natural foot. (Fig 5).

Adams, of Augsburg, with the same instrument, determined the dilatation of the normal foot to be three millimeters at the plantar border and one millimeter at the coronary band; he repeated and verified his work with other instruments.

Some twenty other experimenters arrived at analogous conclusions.

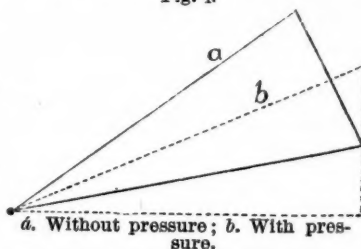
Fig. 2.



Steglich decided that the coronary band and the plantar border dilate simultaneously, but that the former dilates the most from the pressure of the second phalanx, while the dilatation of the plantar border is due to the expansion of the plantar cushion and the flattening of the sole. (Fig. 3).

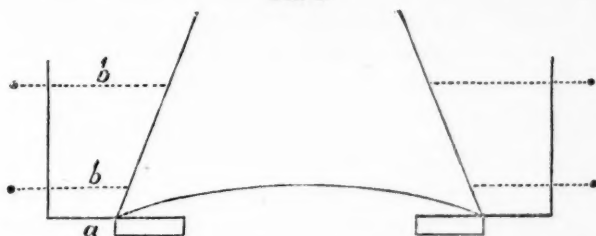
Peters, of Schwerin, from anatomomechanical deductions, claimed the expansion to be due to a circular trajectory of the pedal bone. (Fig. 4). This, of course, included pressure on the elastic cushions

Fig. 4.



From the evidence of these investigators we accept as proven that the quarters

FIG. 5.



and heels of the normal foot of the horse dilate under pressure, that is, when the animal is standing, and more so when it places increased weight on the foot in movement. I, however, agree with Lechner as to the rotation of the heels in some feet, and find that in contracted feet, this rotation is an important factor in increasing the disease. Lechner possibly experimented on slightly contracted high-heeled horses. We can conclude that anything which interferes with the dilatability of the hoof produces an abnormal condition, and must interfere with the vascular structures and nerves contained inside, producing atrophy of the tissues from diminished nutrition, and pain from pressure on the nerves. When any interference with the dilatation of the foot is permanent, it produces a diminution in the size of the organ. This reduction in size may be general, including the whole foot, or local, including only one or both heels; this condition is known as *contraction of the foot, or contracted heels*.

*Contraction of the foot or contracted heels* is evidenced by a diminution in the size of the horny covering of the foot or the hoof, with or *without* lameness. Contraction may be total or partial; in the first case, there is seen to be a general diminution of size, usually accompanied by an increased concavity of the sole, an atrophy at the frog and an approach of the walls of the quarters and heels toward a more vertical position; the surface of the wall is frequently excessively dry, and predisposed to superficial ridges or cracks; in partial contraction the alteration is usually confined to the heels. Contraction may be symmetrical or unilateral; in the former case, both sides being equally affected, there is usually total diminution in the size of the foot, while in the latter the alteration in shape is generally local and more easily remedied. The older veterinarians used the term *true* and *false* to designate a general or limited alteration in shape. True or total contraction, approaching in form the mule foot, narrowed from side to side, with vertical walls, a natural condition in the ass and mule, in the horse may be an *acquired* condition, in which case it is usually incurable, or it may be a congenital condition, in which the contents have been formed, adapted to the altered circumstances; this can hardly be considered as morbid, but while it may not be a diseased foot in itself, it predisposes to all the other troubles which are found, the results of contraction from any other cause.

#### ETIOLOGY.

The study of the etiology of contraction of the feet is, in some cases, an easy matter, but in others it is complicated by various troubles, so that it becomes difficult to determine the cause, or to distinguish it from the effect. In



the majority of cases the secondary effects, or sequelæ, of contraction of the feet, are troubles, which, if they had occurred in a sound leg, would have caused contraction of the foot as a complicating disease.

*Race* has for a long time been recognized as a predisposing cause, and contraction certainly occurs more frequently in horses of breeds which have thick, hard, rapidly-growing hoofs, of dense structure, than those with hoof-walls of a more delicate structure. The Oriental horse has been accused, but I believe somewhat unjustly, of being prone to this affection.

*Heredity* is an important etiological factor. The horse with feet predisposed to contraction will get progeny with like feet; the horse who has, from any cause, acquired contracted feet, is apt to transmit the anatomical defect to his get, and such an animal, although he may not be lame, should be excluded from the stud.

*Dry climate and summer weather* tend to draw the natural moisture from the horny structures, diminish their elasticity, and favor retraction of the tissues, which ends in permanent contraction. Dryness is more serious when alternating with moisture than it is on animals who have been reared in such condition as the horse of the desert, whose constitution has accommodated itself to its surroundings.

*Stabulation* affects the hygroscopicity of the hoof to a marked degree, which is increased when it is continuous for several days at a time, alternating with exposure to excessive moisture. Under these conditions, the fluids of the horny tissue do not seem to be able to find or retain their normal relations to it. An example of the effect of constant dryness is seen in the dead hoof, which alters its shape even when filled with plaster-of-paris.

*Inaction* of the animal, a result of stabulation, diminishes the moisture of the hoof, as it slows the current in the vessel and reduces the amount of blood pressure on its inner surface.

*Too long continuance of the shoes and want of dressing of shod feet* produce the same results by elongating the tissues from their vascular supply. In a stallion, the subject of a legal controversy, kept for twelve months in a stall, the overgrown hoof diminished to one-half its natural diameter, and curled up like the horns of a ram.\*

*Rasping* the walls of the foot after shoeing favors evaporation, and diminishes the hygroscopic power of the horn. *Hot shoes*, which evaporate the fluids from the horn, render the latter improper to reabsorb and hold moisture.

Mechanically, contraction is frequently produced by the vicious system, so common in some shops, of "opening the heels," or cutting away the bars, which are the natural support of the heels and quarters. Shoes fitted too tightly to the heels, so as to hold them and prevent their natural expansion, and nails driven too far back on the quarters, as is seen in the shoeing of some racehorses, both serve as starting-points for subsequent contraction.

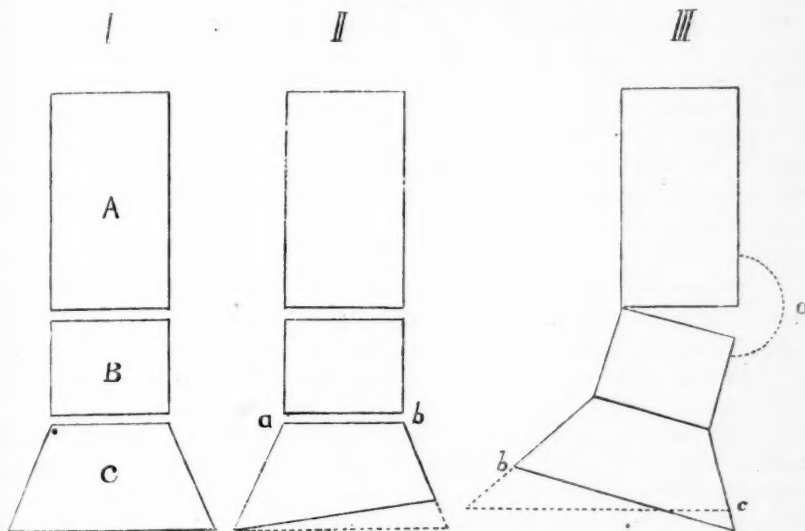
*Pain*, whether in the foot or in other parts of the leg from contraction itself, corn, quittors, wounds, ringbones, or trouble in tendons, when they cause the animal to rest its leg and ease the foot from the ground, produces inaction, want

\* Specimen in Museum at Veterinary School, Alfort, France.

of function, diminished circulation, and exposure to the evaporating currents of air, and are frequent causes of the disease. Traveling at speed on hard roads, and certain other demands, which may only cause temporary pain in the foot, may, at the same time, be the starting-point of contraction.

*Lateral deviation of the foot from its normal position, whether the cause be in the foot itself, in the pastern, or higher up, at the fetlocks, brings pressure on the sides of a quarter, forces the latter in, and exposes the other quarter, and quickly produces trouble. Uneven paring of the foot and crooked shoeing, quittors, and ringbones, in this way are frequent causes.*

FIG. 6.



Schematic Column. First, Second, and Third Phalanges.

I, Normal; II, Uneven paring, producing at *A* pressure of bones, at *B* strain of ligaments; III, A ringbone, producing pressure on quarter, same side.

Surgical operations for quittor and pricked foot are frequently followed by contraction.

## SYMPTOMS.

The characteristic appearance of a contracted foot is usually sufficient to allow of its recognition. There is an alteration in form, which may be total or partial. In the former case, the foot is smaller than its fellow (if both feet are contracted, it is rare that they are of equal size); the foot is ovoid, from the diminished quarters and seemingly increased antero-posterior diameter; the heels are high, or, in flat feet, may be found with their outer walls lying on the branches of the shoe. The frog is atrophied, and exudes a foul-smelling sweat from the lacunæ, and the concavity of the sole is increased. The wall is found dry and hard, or at times has a peculiar shiny appearance, and it is frequently lined with little fibrillar cords. Again, there is an uneven rolling of the surface, caused by circular elevations and gutters. The bars approach a vertical position.

Even with extensive contraction the animal is not always lame; but it usually at first "points," that is, stands with the leg forwards and outwards, resting on the toe. The animal paws the litter from under the affected feet; it is lame on exit from the stable, but frequently warms out of its stilted gait and travels sound, when the enforced functional activity has brought the blood back to the compressed vessels under the heels to lubricate the dried walls. Later, the muscles of the shoulders become atrophied. (Sweeny.)

*Morbid Anatomy.*—In addition to the external alterations which are visible, and which have just been described as symptoms, there is found an atrophy of the internal structures of the foot. The fog is diminished in size, the wall is compact, thickened, and shows a discoloration of the cement; the elastic cushion is atrophied, and shows strata of fibrous tissue and yellow elastic tissue; the podophyllous laminae are diminished in size; the third phalanx and navicular bones may be atrophied.

In "false contraction," or localized contraction of the heels, there is diminution of the transverse diameter of the heels; no increase in the height, and no increase in the thickness of their walls; this form is always acquired, is accompanied by acute lameness and fever in the heel, and is almost always due to bad shoeing.

#### COMPLICATIONS.

The complications of contraction are produced by pressure, defective nutrition, unstable support, and want of functional activity, and may implicate any portion of the entire leg. *Navicular disease*, with atrophy or ulceration of the bone and interference with the synovial secretion, is the result of long-continued pressure; *corns* and *ecchymoses* of the podophyllous laminae are the result of lateral pressure; *quittors* are predisposed to by the defective nutrition of the quarters; *greasy heels* find origin from the same cause; *ringbones* and *windgalls* are produced by the strains to which the bones and tendons above are subjected in the animal's attempt to alleviate the pain in the foot by false positions; contractions and degenerations of the flexor tendons occur from want of function; want of use of the leg causes atrophy of the muscles of the shoulders; uneven support of the leg causes interfering; and last but not least, if the case has been going on for some time, scars of blisters and of the hot iron and setons may be found from the fetlocks to the upper end of the scapula, which have been intended to accomplish what could have been done with a paring knife and a proper shoe.

#### PROGNOSIS.

In general, the prognosis of contraction depends, to a great extent, upon the duration of the disease and the amount of atrophy of the bones and plantar cushion which has been produced. A foot which has entirely diminished in size will rarely return to its normal condition, while considerable contraction of the heels may entirely disappear, but it is wonderful what a resisting and recuperative power the foot possesses, and unexpected results are often obtained. There is no disease in which tentative treatment is so necessary before giving a definite prognosis. Trivial contraction will at times prove obstinate and become complicated with other troubles, while an excessively deformed foot and a seemingly hopeless lameness will make a rapid journey to recovery from the day of the first treatment.

## DIAGNOSIS.

The diagnosis of contraction is a simple matter in itself to an anatomist and veterinarian familiar with the horse's foot, after a careful examination and comparison of first one foot and then the other, and a general estimation of the breed and character of the animal. It is again not, as a usual thing, difficult to determine just how much of the affected foot is involved; whether the whole foot is diminished in size as the result of long-continued trouble, or whether only a heel, a quarter, or some part of the wall is contracted, the result of one or two sets of bad shoes or closely driven nails. But it is frequently a most difficult thing to determine if the contraction alone is the cause of a lameness, or if it is not complicated by other disease; in the latter case it again becomes of the greatest importance to diagnose which is the original trouble and which the sequela. After recognizing the contraction, the shoe must be removed and examined as to its bearings and the clinching of the nails; the foot must then be pared out, and thoroughly searched for pricks, bruises, corns and any staining of the yellow line which succeeds the podophyllous tissue and limits the sole from the walls and bars. Special attention must be paid to the bars, examining if they had been pared thin or bruised. The frog will be examined by direct pressure, compression from the side, and the structure under it by counter pressure on the frog and the hollow of the pastern. The structures above will be examined for quittor, ringbone, synovitis, strains of the tendons and ligaments, and for bone troubles. Whether other troubles *exist* or do *not* exist, the shoe must be replaced in a proper manner, so as to remedy any defect of pressure or deformity as much as possible, and the animal must be re-examined cold, after warming up, and again cold. It is only in this way that the effects of the work, the presence of temporary local fever, and a proper diagnosis can be arrived at. In many cases treatment of a contraction, or of a complicating trouble, or of both, must be continued for some days before a definite diagnosis and prognosis can be given for either trouble.

## TREATMENT.

The treatment of contraction is *preventive* and *curative*.

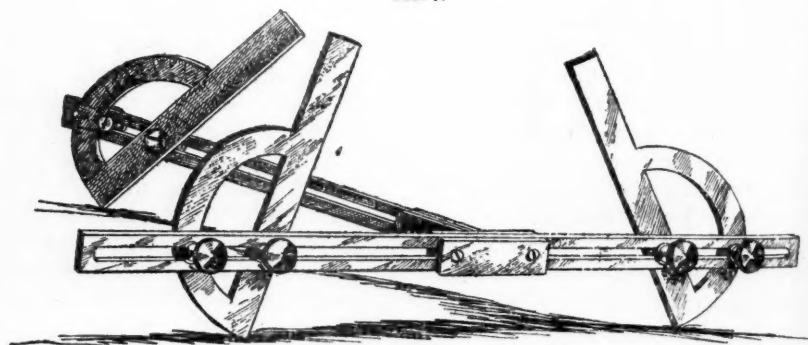
*Preventive* treatment should start with the foal by the dam's side. Winter foals and those in private hands are often forced to stand on dry floors, which bake out the moisture from the cushions of their feet before the wall and frog are fairly ready to perform their proper function, and the dried brittle mass wears off on one side and starts a contracted foot from the earliest days of the animal's life; others which have had the fortune to run in good pasture as foals, at the commencement of winter are housed so that they have no opportunity to wear down excessive growth, and they come out in the spring with deformed feet; others again, from some lameness, injury, or other cause, start a crooked foot, and the lateral pressure soon increases the contraction. From the time the animal is a weanling its feet should be looked after, and dressed with rasp and knife when defects in their conformation and level are found. Good, clean, dirt floors and plenty of exercise prevent dryness and brittleness of the feet; where the latter exists, either from heredity or previous carelessness, the feet should be treated so as to bring them to their normal hygroscopicity. The same rule applies to the older horse, after it has been shod. Thrushy feet are especially

apt, when cured, to become excessively dry and contract. Many horses are passed as sound which would remain so if the feet were properly shod and treated from the moment of purchase, but which soon become cripples, with contraction of the feet from inattention. When an animal is to remain at rest for any time from want of use, illness, lameness of any kind, or from any reason, the feet need immediate and constant attention. At rest, especially if from a lameness, when the foot will be eased from the animal's weight, the circulation is lessened, the food supply to the hard coverings is diminished, the walls are exposed to the evaporating air, and the foot contracts. This must be prevented by paring down the foot, readjusting the shoes, if needed, and proper dressings to supply the deficient moisture. Carelessness is frequently shown in attempting to supply the foot with moisture. Water baths, and especially poultices, remove a certain amount of the fluid from the foot, and rot off the natural protecting varnish from the outside of the wall, and, unless they are promptly followed by other applications, are apt to render the wall dryer than it was before, and to do more harm than good. Preparations of oil are apt to become rancid and produce a rotting effect; when they are used, the foot should always be washed clean from the previous application before a fresh one is applied. Yellow wax, honey, pine tar, turpentine and heavy lubricating petroleum are among the preparations which can be used with advantage. There are also numerous inventions of sponges, fomenting pads, etc., which are of benefit, if not used constantly.

But the most important of all preventive treatment is proper shoeing. If the foot is kept on its proper level with the frog and heels bearing so as to admit of the normal elasticity of the foot, the circulation of the blood will bring the proper nutrition and the natural emollients to the surface of the kerationous portions of the foot, and little more will be needed except for the remedy of other pathological conditions.

*Curative Treatment.*—Most of what has been said in regard to preventive treatment is applicable to the curative treatment of contraction. When contraction has taken place the flooring and bedding of the stable must be looked to; the moisture of the media which come in contact with the feet must be regu-

FIG. 7.



lated; the entire hygienic surroundings of the horse much guarded, as if we had an ill animal to deal with. The foot is now to be inspected carefully and the points and amount of contraction are to be determined. It is frequently useful,

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especially when shoeing is to be left in the hands of a blacksmith, to take measurements of the foot in order to know just what had been gained from time to time, both in the size of the circumference of the foot at its plantar surface and coronary border, and as to the angles of the wall at toe, quarters and heels. For this purpose, and for use in construction, I have invented this instrument, a *Podometer*, (*podo*, foot, and *meter*, a measure), Fig. 7, which can be brought to bear on any part of the foot, showing the level of the sole and heels and the angles of the walls. The instrument is useful also in verifying differences of opinion which exist between the more or less experienced persons who are interested in a shoeing.

In cases of moderate contraction, with little or no twisting of the foot, it can now be leveled and the contracted portions relieved of pressure at once. In more severe cases, the alteration in shape must be nursed, a little at a time, as a too radical change may predispose to missteps, wrenches, or excessive pressure at another point, producing traumatism at other parts. Shoes are also used which by their shape or by the addition of springs, screws or other devices, force the heels apart; but these latter methods should be used with great caution so as not to produce rupture of the blood vessels and complicating inflammation. The choice of shoe depends much upon the surroundings in which the horse is to be placed, if at pasture or in the stable, if at exercise only or at work, and the severity of the work; again, a case left in the veterinarian's infirmary can be treated with heroic dilatation, while that remaining with the owner must be treated with more conservatism, unless it can be seen frequently. The following are the principal methods of expansion:

a. *Barefeet*; where expansion is obtained by frog pressure; this, of course, is only applicable to animals which are to do nothing.

b. *Tips, slippers, half-shoes, three-quarter shoes, semilunar shoe or truncated shoe*, which acts in the same way, but protects the wall from breaking. (Figs. 8, 9).

FIG. 8.

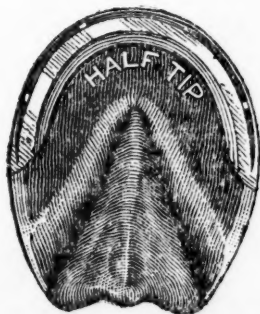


FIG. 9.



c. *Bar shoes* are indicated when the frog is very much atrophied and pressure cannot be brought upon it with a plain shoe. Bar shoe as commonly made (Fig. 10); as properly made (Fig. 11):

d. *Unilateral nailing of Turner* (Fig. 12); with this system the frog and remainder of the foot has play from the toe and mamma to which the shoe is nailed.

FIG. 10.



FIG. 11.



FIG. 12.

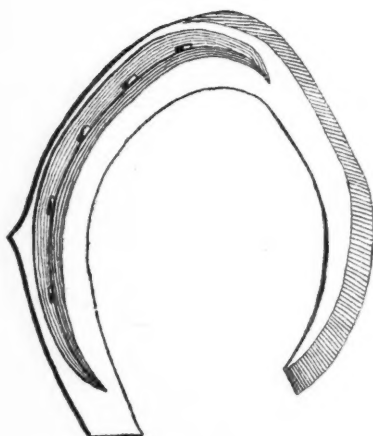


FIG. 13.

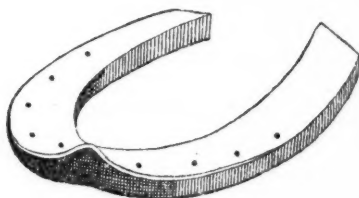


FIG. 15.

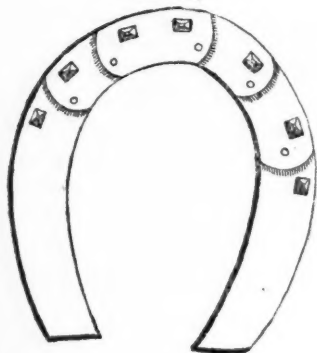


FIG. 14.



e. *External beveling of Mayer* (Fig. 13), is supposed to throw the heels out as the weight of the animal descends on the branches.

f. *The Charlier Shoe* (Fig. 14), protects the edge of the wall below any genetic tissues and allows natural expansion.

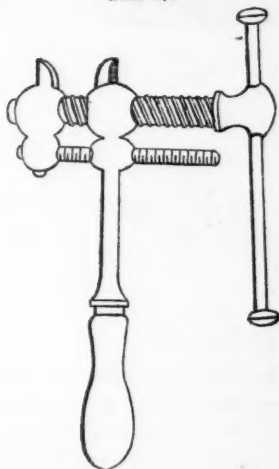
g. *Articulated Shoe* of Bracy-Clark and Vatel (Fig. 15), is not solid.

h. *Defy's Expanding Shoe* (Fig. 16). This shoe can be used with most excellent results when the horse is in the hands of the veterinarian or a careful operator who will avoid too rapid expansion and be ready to combat inflammatory processes if they arise. By means of the Defy vise (Fig. 17), the amount of expansion can be regulated from day to day. The clamps turned into the lacunæ between the frog and bars should be fitted to the face of the bars exactly, and must not be allowed either to bruise the bars or press upon the frog. With this shoe I have obtained most excellent and rapid results in feet which seemed hopelessly deformed, but I always insist that I must see the case frequently.

FIG. 16.



FIG. 17.



*Expanding shoes* have also been furnished with screws set between the branches, the first by Goodwin, then one by Foures, in which the screw was set over a bar shoe, and one by Vandergrift with a fixed screw across the branches.

*Hatin* and *Steinhoff* made shoes articulated at the toe and expanded by a V spring; later comes the *Roberge Expander*, which is held in a plain shoe and also acts directly on the bars; it only differs from *Hatin's* shoe in the shape of the spring.

All these shoes have their merits, and many are adapted to special cases to which the others are not suitable, but *all* should be used with caution and replaced by a plain shoe as soon as the foot commences to assume a normal shape.

With extremely atrophied frogs, artificial pressure can be made by means of sole leather, or the "*Neverslip Horseshoe Pad*," which consists of an india rubber "frog" attached to a piece of sole leather (Fig. 19).

It is needless to recall, except as a matter of historical interest, the *desoling* and *forcible rapid expansion* of Giordanus Ruffs, 1250 A. D.; Carlo Ruini, 1618; Soleysel and others.

FIG. 19.



FIG. 20.



Severe contraction, especially when complicated by sidebones may, however, be greatly benefited by guttering the walls of the quarters at an oblique angle to the fibres of the wall and then resorting to proper shoeing and protection of the weakened wall (Fig. 20).

Prof. A. Liautard, Dean of the American Veterinary College, then presented the following paper :

#### VETERINARY JURISPRUDENCE.

##### A COMPARISON OF THE ANGLO-AMERICAN AND CONTINENTAL LAWS OF WARRANTY.

*Mr. President and Gentlemen*—There are two things connected with the circumstances of the present occasion which I cannot fully account for.

The first is that I should be selected by your worthy Secretary, Dr. Hoskins, to take so prominent a part in your proceedings, and the second is that I should presume so far as to consent to appear before this grand annual re-union of members of our noble profession—this great gathering of veterinarians from nearly every portion of the land—in the character of a conveyor of instruction or the originator of measures or policies of action. To meet with you, gentlemen of the West; you to whom I was wholly a stranger when with others I came to this great and wonderful city to unite our counsels for perfecting the establishment upon permanent foundations of the United States Veterinary Medical Association—was, I am afraid, a great presumption on my part. But the good of the profession was held prominently in view; the welfare of our Association was at stake, and the prospect of solidifying a national feeling of brotherhood and a friendly professional union were all to be considered, and I felt that when thus requested to aid in your discussions my silence could hardly be justified.

And do not these objects furnish a sufficient apology for my confidence in coming before you, and will they not also constitute a sufficient plea for the indulgence with which, I doubt not, you will accept my remarks, even if they

should. haply, miss your approbation and fall short of your expectations? Upon this assumption I proceed.

Gentlemen, when we quietly reflect upon the duties and obligations of the veterinary surgeon, we can hardly avoid being impressed with the fact that ours is not simply a single calling, but is largely multiform in its character, and possesses some very peculiar features; and that these are in some instances of such a nature that it is a wonder that the value of the veterinarian and of the services which he renders to the public should not have been at best sufficiently appreciated to secure for him the social, official and legal standing which he may justly claim for himself.

Many duties are imposed upon the veterinarian which are avoided or escaped by his brethren in human medicine, who has it in his power, in many cases, to assume the title of specialist and to enter upon the peculiar studies pertaining to the role he has chosen, while, on the other hand, the veterinarian, generally speaking, is not only expected to be a competent general practitioner, and even a surgeon, but has often to add to these the functions of an obstetrician, and to that again even the duties of the general sanitarian. Thus, he must be now an equine pathologist; then an expert in cattle diseases; next, even a connoisseur in diseases of the lower animals, including dogs and birds; all this, if not more, but he must in order to supplement these various functions and capacities, and others which might undoubtedly be specified, stand ready to encounter the risk of burning his fingers and jeopardizing his reputation by handling points in law and becoming entangled in matters of jurisprudence and questions of traffic. The beginning of his trouble here is the moment when he is called upon to give his professional opinion in connection with the sale and purchase of domestic animals, principally in the sale of horses.

And this is the subject I have chosen as the topic of my remarks on the present occasion.

The decision of the question of the soundness of a horse, or in other words, his value when offered for sale or sought for purchase, is one of the most important of the duties devolving on the veterinarian. As affecting the seller or the purchaser of the animal, it is of course the first in importance, and it is one which is constantly coming before the veterinarian for the exercise of his skill and trial of his integrity, and I may add, his courage. Every day animals are brought to him for examination and judgment, and he is called upon for written certificates as to their condition and soundness, and it is usually his verdict which determines the question of sale or no sale. The responsibility which is thus laid upon his shoulders may be, and is in fact, sometimes enormous, and no man can count the damage he may incur from an unacceptable decision, pro or con, however honest, when the result of such an opinion may spoil a good trade for one man, or involve another in a bad bargain.

Gentlemen, in the performance of this part of our professional duty there is no possibility of escape or of chance for the concealment of an opinion; it must be stated in black and white, and whatever your judgment may be, it is most likely in a majority of cases, to be a condemnation of the animal.

I said "enormous" responsibility. Yes, not only in a professional sense, but as a matter of social involvement. Standing between the seller and the buyer,



our verdict must be candid and true. Upon no one else can reliance be placed for a correct, fair and honest judgment. No man must buy your opinion; no partiality must influence your verdict; you are nobody's friend, but a judge standing impartially between two parties, one with something to sell and one wanting to buy something; and you are to pronounce upon the quality of an article of merchandize, without considering who may be benefited or who may be injured by your opinion.

Yes, it is a trust of which we veterinarians ought to be proud; one of which we must acquit ourselves with the most delicate fidelity, with the nicest integrity of purpose, with the most scrupulous carefulness; one, indeed, which I believe places us in the first rank amongst useful citizens, by reason of the intimate connection which is thus established between ourselves and the courts of justice. It is a trust, also, which is far from being always a pleasant one to exercise, for it may often bring us within the scope of the threatened vengeance of violent and unscrupulous individuals, as well as the temptations of pecuniary offers, and may all too frequently place us between friends or relatives, with, we know not, what hazard of planting estrangement and enmity; yet with but one line of conduct for us to follow, in answering the single question referred to us for solution, to wit: "*Is this horse sound or unsound?*"

The fact that this is in an important sense, an English-born nation, with a congenital and ineradicable spirit of traffic in our constitution, or that at least most of our antecedents and customs are English, accounts for the fact that many of our laws are either of English origin or are conformed to English precedents or spring from English usages, and those which regulate the trade in horses or relate to questions of property in the animal, are far from being exceptions to this rule. It is for this reason that, following English traditions, we are guided to a great extent in our examination and the conclusion we arrive at in horse trades by what we find laid down in British works on this subject, and principally in those of Oliphant.

What is soundness? is indeed, not a question which can always be answered correctly off-hand. If it must mean a *perfect* horse—perfect in form and wholly free from blemish or disease—it will undoubtedly be as difficult, perhaps, as impossible a task to find such an animal as it would be to find a literally perfect human being. But this cannot be the true meaning of the definition of soundness. The term certainly cannot mean literal perfection; but where then, it may be asked, can it be said that perfection ends and imperfection begins; at what point or line will soundness and unsoundness become merged?

The definition of J. Stewart, who says: "that a horse is sound when he has no disease about him, nor any effect of disease that renders, or is likely at any future period to render him less useful than he would be without it," can scarcely be admitted because it approaches too nearly the idea of literal perfection, especially when the author goes on and states further that "a horse may have disease about him and be sound; he may at least have the effects of disease, have splints, bony or callous tumors, warts, specks on the eye, be blemished all over and still be a sound horse." I might ask what we would think here of a veterinarian certifying as sound an animal whose metacarpal regions were covered with splints, whose coronets were enlarged with large ringbones, whose eyes contained speck

cicatrices of keratoma, and whose coarse hocks were scarred with the cicatrices of actual line and point cauterization?

Oliphant tells us that "a horse free from hereditary disease, being in the possession of his natural and constitutional health, and having as much bodily perfection as is consistent with his natural formation, can be certified as being sound."

No doubt this is a much better definition than that of Percivall, who says that "any horse that is lame or has that about him which is likely, on work, to render him lame is unsound," a definition which largely covers the subject of soundness so far as the function of locomotion is concerned.

But aside from all this, with us, the question must necessarily remain the same. Courts of law will differ in their opinions, and judges will express the varying ideas of various nations on the subject, and the announced results of experienced veterinarians will be too often treated with contempt, or ridiculed on account of difference of opinion, and their various interpretations of lesions and symptoms; and to use the word of a learned judge in a case recently decided: "It is more and more wonderful to know how anyone could pretend to know what was soundness and what was not soundness." \*

In the presence of such facts, gentlemen, facts with which I think you are all familiar, and in the light of such an experience as is common with us all, and of occurrences which I have witnessed too often in a long and extensive practice of this specialty, a doubt has often arisen in my mind whether we are doing right in conducting our examination as we do, and whether in granting our certificates as most of us do, we are dealing justly with all parties concerned, with our employer, with the dealer, and with the horse which has been brought before us. Are we dealing in a strictly legal sense with the inquiries made of us, and justifying fully the confidence lodged in our integrity and intelligence?

What, indeed, is asked of us by the gentleman who wishes to become the purchaser of an animal which after satisfactory trial he has selected as one fit to do his work and minister to his pleasure? The question is a simple one: "Is he sound?" and the answer ought to be equally simple. But how many horses can fulfill the conditions of an unqualified answer, even if literal perfection is not demanded? We may pass a horse because nothing but a small splint is visible, and yet in a few days he may become lame with it.

We may reject the next case because of a small exostosis on one hock, or a small spavin, and yet he may be purchased and may turn out a good and serviceable animal. Can we always distinguish, or are we to reject every animal which exhibits one or any of the ailments that we find in the true sense of the word to constitute unsoundness. To use the words of Dr. Wm. Hunting, the editor of the *Veterinary Record*, "the want of a good definition renders the seller of a horse who gives a warranty, or the veterinarian who gives a certificate, liable to actions at law by the buyer whenever his new purchase goes wrong." And if this should be a correct view, it is easy to see in what a peculiar position we may find ourselves in some easily supposable cases. Let us suppose some condition in which an animal may be affected with some form of acute ailment, which has assumed a serious character and may become incurable or possibly

\* *Veterinary Record* (June 12, 1890).

prove fatal. Here is a patient which, at the time of examination, had but a slight discharge from one nostril, not very abundant; muco-purulent; inoffensive. We consider it a simple case of catarrh, and before many days have passed it proves to be merely the first indication of a diseased condition of a tooth, which may prove troublesome and refractory to treatment, and, perhaps, result finally in death. Again, assume an animal free from any blemish or unsound indication other than a slight increase of temperature, and perhaps, a slight cough. He is bought, though sickly, and only a few days later dies from an attack of lung disease of an acute character, perhaps grafted on an organ already affected with chronic disease. Next in the category may come an animal in apparently perfect health, but which dies a few days after with colicky pains, due to calcareous formations in the intestines or a vesical calculus.

Similar cases almost without number might, if necessary, be cited in illustration of the point we are discussing. Are we to reject all these because, as vaguely and indefinitely expressed, they are "sick?" Yes—but what then of those with (perhaps latent) diseases which we have not been able to detect, or whose termination we have failed to foresee. If such as these are to be rejected for mere negative reasons and on hypothetical grounds, are we, again, doing justice to our calling, to our obligations, and to all the three parties concerned? If not, I fear that the general investigations which constitute our so-called "examinations" are mere farcical and barren pretenses, and that our certificates are worth less than the paper on which they are written, and can furnish no protection to the buyer, but, indeed, are rather detrimental to the honest dealer and unjust towards the good qualities of an animal which, though unsound, we know in many instances might prove to be a very useful servant, and fully compensate his purchaser, and perhaps might be turned against us in a court of justice.

If I am right, gentlemen, in suggesting such an interpretation of our position, and such a view of the performance of an examiner's duty according to the English law of warranty, as well as the, at least possible, ill-effects of its application, it seems to me that the moment may not have been badly selected to consult with this assembly of veterinarians on the subject, and to ask for their opinion and their suggestions in respect to a remedy for the evils to which I have referred.

This is no new subject with me. Years have passed since its first presentation by myself in Boston, before this same Association. But we were young then—our membership was small—and to-day, when we have strengthened our standing by the accession of so many worthy and accomplished associates, I hope the matter will receive at your hands the attention and consideration to which it is so well entitled. And now, admitting the inefficiency of the old law, with its errors, the problem presents itself in two forms: First, what better methods can be devised; and secondly, if proposed, can they be made practicable and available, and if so, by what means?

Let us consider the first of these points, and to answer this it will be necessary to call your attention to foreign legislation on the subject, and to refer you to the laws which exist in various European States. Let us for, instance, consider the French law which, with some modification, however, we find re-enforced in other nations, including Belgium, Switzerland, and I believe, Italy, and this may be

called the Continental law. In this law the condition of soundness or unsoundness is not judged by the rules which prevail with us, although the method leads to the same results. But the point principally considered is the effect of the unsound condition when it exists, so far as it bears upon the usefulness or the value of the animal. For example, the question is not so much whether an animal has any of the exostoses of the locomotory apparatus, or whether, when present, they interfere as a matter of fact with his working power, as by causing lameness, for example. It is not so much whether he is affected with disease, either acute or chronic, as whether, in a case of fatal termination, it existed previous to the purchase. It is not soundness as we understand it, concerning which the veterinarian is called to decide, but whether the animal has a "*vice rhedibitoire*," which, at the time, interferes with its present and possibly future usefulness or value. By the term "*vice rhedibitoire*," is understood a vicious and deficient condition, such as those which by law render the contract void, if the animal was warranted free from them. By this definition, you observe, this warranty is almost synonymous to our English warranty of soundness, which means free from diseases that constitute an unsoundness, while the other means free from any "*vice rhedibitoire*," which have been specially designated.

To illustrate the first: An exostosis will not be a *vice rhedibitoire* so long as it does not give rise to the characteristic lameness of those affections, "*intermittent in character*," either when warm or when cool.

A disease which proves fatal soon after, or within a few days of the purchase, will not authorize the repudiation of a bargain, unless it is proved that it existed before purchase, or was grafted on a chronic lesion previous to it. And it is thus that we find intermittent lameness and chronic affections of the lungs prominent among the "*vices rhedibitoires*" of Continental laws of warranty.

Considering now both what you will permit me to denominate the English and the French laws together, we shall no doubt find much similarity in the two cases mentioned. The result may be about the same, but how much simpler and more satisfactory otherwise, professionally considered, the latter, in view of the performance of the duties and the execution of the trust placed in our hands. To comply with our English laws we must certify to the existence of a condition which can hardly be found, either in man or horse—*perfection* in the abstract and literal sense of the word—and expose ourselves to no end of perplexity and trouble in the pursuit, while for the fulfilment of the more rational and practical provisions of the Continental laws, we are only required to detect within a certain period of time the presence of a few designated diseases, or the manifestations of a few definite symptoms. The English law obliges us to detect one of all diseases, the French code asks us to discover at the time of purchase or previously, or within a given period from the delivery, any one of the following diseases and pathological conditions, viz.:

Speaking at present for the horse only—periodic ophthalmy, glanders, farcy, immobility, pulmonary emphysema, intermittent lameness of long standing, intermittent hernia and chronic diseases of the thoracic organs, roaring, and some peculiar form of cribbing.

And there is another point which I am sure will, in your estimation, count in favor of the Continental mode of examination. It refers to the time at our



disposal for the completion of our task. Indeed, what time is allowed to us for the formation of our judgment, and for the preparation and the delivery of our certificate? A very insufficient time, as we all know. It may vary from a few minutes to perhaps a few hours. Is that sufficient? How in such a length, or rather such a "shortness" of time, are we to detect some of the special forms of disease, peculiar intermittent lameness, roaring, perhaps intermittent hernia, epilepsy, &c. In the European law from nine to thirty days, according to the "vice rhedibitoire" looked for are allotted to the buyer, who thus has ample time to satisfy himself of the quality of his bargain, and thus also the veterinarian has a reasonable opportunity to detect an unsound condition, which, according to our English mode, becomes impossible.

In fact, Mr. President and gentlemen, it seems to me that in the superiority which I have endeavored concisely to point out in the European legislation on this subject, we are inevitably brought to the following conclusion:

Under a reformed régime, when it is once established, we shall have no more fear of contradictory certificates—one of them asserting soundness to-day, to be followed by another, affirming unsoundness four or five days later, and *vice versa*—no more danger of opposing opinions amongst veterinarians employed as experts who discredit one another, and the general profession likewise, by contrary announcements of the presence or the absence of morbid conditions; no more decisions of judges in the courts of law directly in opposition to those of practising veterinarians; and, above all, no more doubts, or at least a reform of opinion in respect to the supposed and generally imputed dishonesty of every man in the community who chances to have a horse for sale.

In respect to the consideration of the means by which such a law, after being properly framed, could be made practicable, I see no reason why such a thing might not be effected in this country as readily as it is in the various European states, if we will but bring ourselves to profit by their experience and follow their example in framing our laws and putting them in execution, as they have done and are doing.

But I have already held your attention too long, and the subject is so exhaustless that I am almost tempted to ask you, paradoxical as it may seem in me, not to discuss it. I yet consider the matter to be one of such importance to all parties interested, and see so much injustice to be reformed, so much opportunity to do good both to buyers and sellers, and so fair an opening for securing a benefit to ourselves in the elevation of our profession, in the performance of this special duty of the examination of animals on purchase, that I can scarcely bring myself to suspend the discussion. I trust to your good nature to forgive the detention to which I have subjected you, and to attribute it wholly to my interest—which I am sure you share with me—in the subject which I have endeavored to illustrate.

President Huidekoper introduced Dr. Olaf Schwartzkopff, Professor of Veterinary Medicine in the University of Minnesota, who read the following paper:



## NATIONAL AND INTERNATIONAL MEAT INSPECTION.

BY OLAF SCHWARTZKOPFF.

GENTLEMEN:—No occurrence in the history of the United States has had more significant relation to the veterinary profession of the country than the repeated endeavors of the Legislatures of several States to make meat inspection laws. Although these State laws have proved inefficient and have not been sustained, it is not because the principle of such laws is wrong, but because the sanitary principles involved have not been sufficiently comprehended and guarded. Still, the movement in this direction has awakened great public interest, especially among agriculturists. In consequence Congress has passed a bill providing for an inspection of meats for exportation into foreign countries. While this law is only one step in the right direction, it will, if carried out, benefit the stock raising farmer of this country; and will also advance the cause of the veterinary profession of the United States, a feature which probably was least thought of by most of our national legislators.

Under these circumstances, then, it becomes us to use this occasion to discuss the principles which should govern sanitary meat inspection laws both at home and abroad.

In dealing with the subject I will not enter into the history of meat inspection, but only remark that it is not at all a modern idea, as stated by some newspapers and agricultural journals. In ancient times, it was, of course, a religious rite, while it now belongs to sanitary science. Nor will I refer to the literature on the subject, which is quite comprehensive in some European languages. But I shall step at once into the proper theme and ask the following questions:

I. Is meat inspection necessary, and is it a sanitary measure?

II. What meat shall be regarded as wholesome for human food, and what as unwholesome?

III. How shall meat inspection be carried out?

I. The history of medicine tells us emphatically that there exists an intimate relation between our health and our use of animal food. It is an established physiological fact that an albuminous diet gives the human organism greater energy. While thus wholesome meat may be regarded as of the greatest importance from the standpoint of national economy and also as one of those indirect civilizing powers, yet meat from diseased animals brings forth many and dreadful dangers to society. Not only may we become temporarily sick by eating flesh of animals which were suffering, for instance, from a disease accompanied by high fever, and through the meat acquire those more or less injurious animal parasites such as tape worms and hydatides of the lungs and liver; but even life may be directly menaced with danger from the use of trichinous pork or meat from tuberculous cattle or hogs, or from the most dangerous group of diseases, in this direction, septicæmia and pyæmia.

But the general public can have no sufficient knowledge of these facts; it is impossible for the masses to acquire this particular knowledge in the other engagements of life. Individual self-protection seems impossible, consequently it falls upon the government, State or general, to provide a protection for our health and life alike in this direction, as is done in other matters of a sanitary

nature. For this reason meat inspection becomes a sanitary precaution demanding the attention of State and local boards of health.

II. In dealing with the question, "What meat shall be regarded as wholesome and what as unwholesome," I think it is essential that we should distinguish between inspection ante-mortem and post-mortem. I do not mean that we should separate these two inspections, for in all critical cases both are required for an intelligent decision. But in looking over the approved systems of veterinary police of the foremost European countries we find that provision is made in most of them to directly forbid the consumption of meat of certain diseased animals. The reason for this action seems to be, first, that the use of meat in certain diseases is usually fatal; and secondly, that if such meat be used the speedy extinction of certain infectious diseases is almost impossible.

Besides this, we know from statistics in meat inspection that in certain diseases the meat undergoes during life such alteration as to render it, without question, unfit for human food. In these cases we should not allow the regular slaughtering of the animals under any circumstances, but see that the carcasses are effectually destroyed. In other diseases the examination of the living animal combined with post-mortem inspection is necessary to enable us to properly decide whether the flesh may be used for human food or for industrial purposes only, or should be totally destroyed. Still there remains a great variety of diseases in which the determination of the wholesomeness of the meat depends entirely upon an examination post-mortem. So large is the number of these diseases that some veterinary officers of the great public slaughter houses count them as being about 90 per cent. in the common routine of business.

With these points in view I will undertake to make a classification of the diseases demanding special attention in the practice of meat inspection.

I.—*Diseases in which animals should be condemned, killed and the carcasses effectually destroyed.*

(1) Anthrax. (2) Rabies. (3) Septicæmia. (4) Cattle Plague. (5) Glanders. (6) Small pox in sheep. (7) Swine plague and hog cholera. (8) Unborn animals.

II.—*Diseases in which slaughtering may be permitted to ascertain whether the whole or a part of the meat is fit for human food, or to be used for industrial purposes, or to be destroyed.*

(1) Foot and mouth diseases. (2) Tuberculosis in cattle, hogs and chickens. (3) Actinomycosis in cattle. (4) Icterus. (5) Milk fever in cows. (6) Hydrathorax and ascites. (7) All diseases which are combined with high fever, general emaciation and debility, for instance: pneumonia, enteritis, uteritis, etc. (8) Overheated and too young animals, which should be kept for further examination.

III.—*Diseases ascertainable only after slaughter, and in most cases by the use of the microscope.*

(1) Parasitic diseases of meat: *Cysticercus cellulosæ* in hog and deer; *cysticercus cellulosæ tænia med.* in cattle; trichinosis of hogs; actinomycosis of hogs; sporospermia and muscle distoma of hogs. (2) Parasitic diseases of those which are used as human food: brain, heart, lungs, liver, kidneys and organs intestines. (a) Brain: *coenurus cerebralis* in cattle. (b) Heart: the different

cysticerci. (c) Lungs: strongylus micrurus in cattle; strongylus filaria in sheep; strongylus ovis-pulmonalis in sheep; strongylus paradoxus in swine; echinococcus. (d) Liver: cysticercus tenuicollis; echinococcus; distoma hepaticum. (e) Kidneys. (f) Intestines: Tapeworms and other intestinal worms that can be easily removed by turning the intestines and cleaning them with water.

This tabulation of diseases may serve for general purposes until through further scientific research certain diseases are better understood. Also it is sufficient, as long as we limit ourselves strictly to the question whether meat is wholesome or unwholesome for human food. But it is sometimes asked, if certain meat is of a proper nutritious quality. This raises another question, whether such jurisdiction belongs to veterinary science at all. It is probable, that if meat inspection should become developed in this direction, the chemist will be the proper man to decide. But if we pursue meat inspection within the limits of veterinary science, we are strictly in our line of work, and will come across very few difficulties. Still there occur cases which will not fit into the classification as suggested above, neither can any classification or direction as yet be made that will be a complete guide in all cases. For this reason alone, if not for others, it is obvious that only qualified veterinarians should be employed for this sanitary work; men who will decide such cases according to their knowledge of pathology, men to whose sphere of knowledge and judgment the whole question naturally belongs. And this will lead us to question III.

### III. How shall meat inspection be carried out?

The practicability of a systematic inspection of meat and the efficient control of the meat supply requires:

- (1) Proper legislation to regulate the inspection and supply of meat.
- (2) The erection of public abattoirs.
- (3) Men of special scientific training to act as inspectors.

Without these provisions combined, any attempt at meat inspection will have very little value as a sanitary measure. We have witnessed the enactment of the so-called meat inspection law in the States of Indiana, Minnesota, Colorado and the Territory of New Mexico; these laws were called meat inspection laws, while they provided only for an inspection of the living animals in the stock yards, which consisted mainly in a superficial glance at the animals by the inspector from a distant point, condemning certain animals bearing conspicuous, but often harmless blemishes and overlooking others affected by dangerous maladies. On the whole the performance amounted merely to a counting of the animals for the legal fee per head. I will read an account of such inspection from a newspaper slip.

After discussing the enactment of the law, the reporter writes: "The inspector can inspect one thousand two hundred hogs and six hundred cattle a day without trouble. How does he do it? The inspector, be it known, doesn't feel any pulse, look at any tongues, apply the stethoscope or go through any hoodoo incantations in determining the health of a steer, hog, sheep or calf. He just sizes the animal up, and if there is anything wrong, he says he will see it instantly. In the case of cattle, which it is known are on the market for slaughter, he looks them over when they are weighed. It is also at the scales that all sheep

and hogs are inspected. As they are driven on the scales they are counted, and again as the gates are opened and they troop off. The inspector stands up on the fence and if he sees a hog which does not wiggle about as though he felt tip-top, he is singled out and rejected. This is how animals whose flesh is intended for human food, are inspected under the new law."

It does not need any comment on our part to show the absurdity of such inspection. But it works injury to the public, who believes it is now protected from diseased meat and that no change of such law is needed. The butcher and stock dealer rather favor such inspection, as it does not cause them any loss or inconvenience. But we meet with the most vigorous opposition on the part of these very men when we declare the necessity of inspecting the slaughter house and the process of slaughtering and dressing. This they regard as an encroachment upon their private affairs. We may go all over the country and we will find that entrance into the slaughter house is not usually allowed, and we should not blame the butcher for this, for the slaughter house is his *sanctum sanctorum*. Here he polishes his meat and makes the most of those manipulations which prepare the meat for the store. While it does not necessarily follow that anything wrong is done, and while I am personally convinced from years of official intercourse with butchers that in the main they are honest men, still there are some of them who are not so honest and who will use without scruple diseased meat even if they know it to be dangerous. In the slaughter house, then, is just the place for the sanitarian to enter into a careful inspection; here he may often detect numerous pathological conditions which he never could have found in the living animal.

But even this is not the ultimatum of inspection; to accomplish our full purpose, we have to follow the meat into the store and direct such arrangements for its handling and storage as may be demanded by hygienic precaution, and especially in seasons favorable to the development of micro-organism. To do this, and to do it efficiently, we need such laws as will recognize and meet the emergencies just mentioned. While there must necessarily be left a certain liberty as to the decision of the sanitary officer, it is desirable that he have, as a basis for his action, a well defined law which can be understood alike by him and the butcher and the stock dealer. Such law is not only essential for the execution of meat inspection, but it will also save the butcher and the sanitary officer needless dispute and misunderstanding. The more elaborate such law is formulated, the better it will work. It must define in unmistakable terms the duties of the sanitary officer and the butcher. And above all, such law needs the advice of scientists, as well as of the lawyer. It is one of our foremost duties to watch the development of these new laws, to instruct the public about the proper principles involved, and to use such professional influence upon legislators as to produce an efficient law. If this is done quietly, but persistently, we cannot fail to produce much good.

The question for us to consider now is, where can meat inspection be carried out? Whoever has had the chance of visiting a slaughter house, such as are found scattered all over the land in city or country, must have felt disgusted at the prevalent condition of such places. Not to speak of the total absence of any hygienic arrangements, the unclean manner in which they are kept makes



them places of horror. Gentlemen, I feel sure that no meat inspection is possible nor advisable in such places; we cannot be expected to perform our duty in blood and dirt up to our ankles. If civilization should be extended anywhere, it is into the slaughter house. But looking at this matter as leniently as possible, it remains a duty to condemn these places and to demand the erection of public abattoirs by the community. No expense is too large, no sacrifice too heavy to accomplish this end. The plan, location and erection of such public abattoirs should not be decided upon without the advice of a sanitarian and an architect who can properly apply the principles of hygiene to such buildings.

As to the question, "Who should be recognized as the proper expert in meat inspection," there can be but one answer, namely, the veterinarian. To successfully perform both ante-mortem and post-mortem inspection, requires a thorough knowledge of the physiology and pathology of our domestic animals and their relation to the human race. As the physician is too much of a specialist to be compelled to pursue these studies, the other medical profession should consider them. This is specially proper since every educated veterinarian diligently follows the discoveries of medical science, whereas, the physician is largely ignorant of what is going on in veterinary science.

To employ laymen as meat inspectors, such as stockmen and butchers, is a great mistake. I know from personal observation that such men will decide according to their feelings and prejudice rather than from their knowledge. If asked why they condemn such and such meat, they will say, "I would not eat such flesh." The argument of some authorities on the employment of laymen is, that many veterinarians do not know more about it than these men. Now that is erroneous. We may candidly admit that many veterinarians of this country are not up to a high standard of education; but however little they may have gained at the college, they have gone through a systematic course which will at least enable them to know why they do so and why not otherwise; and, may I ask, is there any profession in the United States which has a uniform standard of education? Is there not the same difference of general and professional accomplishments in physicians, lawyers and ministers? Still, however great may be at present the perplexity about everything belonging to meat inspection in the heads of some of our legislators and their followers, we may feel sure that the whole question will solve itself in time on its natural basis, and that the veterinarian of the United States will duly occupy the same position as a sanitarian that he effectually holds in European lands.

Gentlemen, having discussed the principles of meat inspection, it is not difficult to apply them to national or international legislation. In the United States there seems to be the tendency to deny the right of a single State to enact laws requiring meat inspection within its own limits, as this naturally restricts interstate commerce. It seems, then, as if the national government is the proper authority to carry out such laws. It does not matter much from our professional standpoint, whether the national government or the States pass such laws. But if there be no uniform law otherwise, we should unite our influence in behalf of the interested public, to secure a national law, which carries with it so much more authority and efficiency. It is to be deeply regretted that the bill recently introduced into the Senate by Senator Paddock providing for



national inspection of both cattle and hogs and their products intended for transportation from one State or Territory to another and for foreign exportation has not been passed by Congress. This bill, with the exception of a very few points, was well adapted to serve the purpose and would have been a judicious move. The failure of this bill to pass leaves us still without a national inspection law. Still, necessity will demand this or a similar measure in the near future.

There is an increasing disposition on the part of our legislators to promote exportation of meat. That this can be accomplished only when we have a proper inspection throughout our country, and one which foreign nations can accept as adequate, is evident to any one familiar with the strict meat inspection laws of European countries.

Possibly if meat inspection is brought into international negotiations it may undergo some slight alterations, but its principles will stand, and we shall have to adopt them.

The Edmund bill which just passed Congress provides for the inspection of salt pork for exportation. I will read you Section I. of this bill:

"An act providing for the inspection of meats for exportation, prohibiting the importation of adulterated articles of food or drink, and authorizing the President to make proclamation in certain cases, and for other purposes."

"Be it enacted by the Senate and House of Representatives of the U. S. of America in Congress assembled, That the Secretary of Agriculture may cause to be made a careful inspection of salted pork and bacon intended for exportation, with a view to determining whether the same is wholesome, sound, and fit for human food, whenever the laws, regulations, or orders of the Government of any foreign country to which such pork or bacon is to be exported shall require inspection thereof relating to the importation thereof into such country, and also whenever any buyer, seller, or exporter of such meats intended for exportation shall request the inspection thereof."

This is the text referring to meat inspection, and then follow nine long sections prohibiting the importation of adulterated food and drink. While this may be evidently very necessary, it has no direct logical connection whatever with a meat inspection law, and will look very suspicious in the eyes of the unprejudiced foreigner. But to come back to the section read, is it not a mockery on what has just been stated at length? This alleged inspection of salt pork can only have reference to microscopical inspection, and you know with me that it is a most hopeless task to attempt such inspection. From the process of curing with salt the meat becomes so hard and rough that it is difficult, almost impossible, to prepare it for microscopical examination. Such methods are of very little value; indeed for a careful microscopical examination are useless.

How then can we expect under such law, that the foreign restrictions will be withdrawn? And if exportation should be attempted under such circumstances, what will be the result? Undoubtedly a second inspection on the part of foreign countries, which will add this expense to the price of the pork. The poor classes in several European countries are anxious to buy American pork, but will not be able to do so if the pork is not cheaper than that of the home country. This must reduce our export trade to almost nothing.

The European countries which import American pork are Germany, France,

Norway and Sweden, Denmark and Italy. All these countries have at present restrictions against American pork. All these restrictions are based on sanitary grounds; whether correctly or not, I will not here undertake to discuss. Now what change can we reasonably expect to result from the Edmunds law?

Gentlemen, in closing my paper, I wish to appeal to your continued interest in the questions just discussed, and I especially appeal to the deans of the veterinary colleges of this country to provide for separate lectures on meat inspection, with practical exercises in public abattoirs; that if called upon we may have men able to undertake the responsibility which is connected with this sanitary measure. There can be no question that we shall witness some important legislation in regard to meat inspection in the coming years, and it should be our professional pride to intelligently advise our legislators as to the proper scientific standpoint of such laws.

As veterinarians we are doubly interested in this question. It concerns us as members of the general public, but to a much greater degree does it interest us as members of the veterinary science, to which it gives greater opportunities and adds greater responsibilities.

Dr. Berns, of Brooklyn, was introduced by President Huidekoper, and read a paper as follows:

#### MOSS AS A SUBSTITUTE FOR LINSEED MEAL AND HOT WOOLEN CLOTHS.

BY GEORGE H. BERNs, D.V.M.

Perhaps there is no class of remedies better known and more frequently used than poultices and fomentations.

Their efficacy as remedial agents and their physiological as well as their therapeutic actions are so well recognized and understood that it would be a waste of time to even refer to them.

There is hardly a day but what all of us order a poultice to a horse's foot or prescribe hot fomentations to some other part of the body for the purpose of relieving pain and suffering, and it will be admitted that their sphere of usefulness is almost unlimited in the practice of medicine and surgery, yet in very many instances are we obliged to dispense with them owing to our inability to apply them effectively, for there are many locations on the body of an animal where no poultice or fomentation can be applied or kept.

Linseed meal is practically the only substance used in veterinary practice to make poultices, and while it is safe, retains heat and moisture well and answers the purpose in the majority of instances, it has many disadvantages.

1st. It requires considerable skill and time to prepare and properly apply a linseed meal poultice.

2d. They are bulky and heavy and tend to sag down from their own weight, and on that account cannot be applied to many parts of the body.

3d. They are rather dirty and during warm weather are apt to become foul unless very frequently changed, and it requires time and labor to clean the parts after a poultice has been removed.

Hot fomentations are usually made by saturating clothes or woollen blankets

in hot water and applying them to the desired parts while hot and covering them with oil silk or some other air-tight material, and in regions where they cannot be kept in position we content ourselves with ordering the parts simply bathed with hot water.

That these methods are extremely laborious, troublesome and in many instances inefficient is admitted by all, and I have no doubt that many attempts have been made to improve upon them.

Spongis piline is perhaps the only substitute that has been offered to the profession as a convenient vehicle to apply heat and moisture, and while it does its work well it is hardly applicable in veterinary practice on account of its high price and its many other disadvantages.

To devise some other means of applying fomentations and poultices than the antiquated methods referred to has occupied considerable of my time and attention for a number of years, and upon trying a variety of substances I found one, which I considered of sufficient value to experiment with for months, and I am pleased to say that my time and labor has not been entirely wasted, for in my own practice I have employed it extensively for a long time and with most satisfactory results.

The substance referred to is a herbaceous plant found in swampy and shady localities in many sections of the United States and is known as moss. Dr. Muhlenberg, of Lancaster, Pa., in 1827, describes over 170 varieties, all of which possess the power of imbibing and retaining large quantities of moisture and seem to have a peculiar resistance against the actions of ferments, for I have never known moss to become foul or offensive no matter how long or in what way employed. Some of the mosses are extremely coarse, with woody stems and ill developed short leaves. The plant I have adopted as a substitute for oil meal and woolen cloths, is a very fine, long, thin-stemmed vegetable, with soft, slender long stems and branches well coated with large serrated leaves.

Carefully conducted experiments have proved that this variety at least is positively non-irritating even to the most delicate and sensitive surfaces, but that it possesses properties which I believe will in time give it a prominent place among the remedial agents of the United States Pharmacopœia.

1st. Moss possesses the power of retaining moisture for a longer period than any other substance known, and if properly protected by air-tight coverings it will retain heat fully as long if not longer than ground flaxseed.

2d. If applied to the body in a proper manner it can be kept saturated without removal or re-application, thus avoiding a great deal of time and labor to attendant, risk of exposure and annoyance to patient.

3d. It can be rendered antiseptic, astringent, anodyne or irritating as desired by saturating with such solutions, and affords a most convenient and efficacious means of dressing wounds.

4th. It is soft, pliable and suitably elastic and will adapt itself to almost any position where no poultice or surgical dressing can be applied.

5th. It is cleanly, cheap, and if properly prepared, extremely easy of application.

Recognizing these properties and realizing the difficulties almost always met with in placing and retaining in position poultices, fomentations and surgical

dressings, I conceived the idea of placing the moss in sacks or bags, quilting or tufting them to guard against displacement, and making them into shapes and sizes to fit almost any part of the body. After months of experimenting I am at last in a position to place before the veterinary profession a complete set of moss fomentation pads, which have in my practice proven to afford a most convenient and efficacious means of applying fomentations or surgical dressings. The result of our labors in this direction has been the production of thirteen different styles and shapes of moss pads, intended to cover those parts of the body that most frequently require surgical attention.

I will not tire your patience by giving a minute description of all of them, but would beg your indulgence for a few moments longer to say a few words upon one or two of them. One of the most useful is probably the foot pad. It is made in the shape of the foot, and from  $1\frac{1}{4}$  to  $1\frac{1}{2}$  inches in thickness. Saturated in water or any medicated solution that may be indicated and placed under the foot of a horse, kept in place like any other poultice, it will adapt itself immediately to the irregularities of the plantar surface and afford an equal distribution of pressure to the parts, thus preventing in a great measure the formation of exuberant granulations, so troublesome in all cases where it becomes necessary to remove portions of the horny sole. It forms a soft and elastic cushion and means of rest, and in laminitis it affords ease and comfort at once, it will remain where placed, is perfectly clean and easily re-saturated without removal by simply dipping the foot into hot water or any medicated solution, which it absorbs quickly and afterwards retains. In my practice the use of linseed poultices for foot troubles has been almost entirely abandoned, for the moss pad is cleaner and in my experience far more efficacious.

The pastern and ankle pads are next to the foot pads most frequently used, and that they will adapt themselves to the conformation of the parts and allow an equal distribution of pressure is demonstrated by a few specimens that have been used and allowed to dry on a horse's leg. For a full description of these as well as the other pads, I would refer you to our pamphlets on Moss Fomentation Pads.

President Huidekoper introduced Dr. J. C. Meyer, Sr., of Cincinnati, Ohio, who read the following paper:

#### COTTON SEED CAKES.

By J. C. MEYER, SR.

The utility attributed to this article, as a food supply for domestic animals, is, according to my estimation, worthy of consideration.

The acknowledged good results obtained, both in hygiene and nutritive processes, by feeding oil-cake meal, the residue from flaxseed, seems to have paved the way for the consumption of cotton seed cake meal.

The few accounts I have read as to its efficacy as an aliment were very favorable, but my first, and thus far only, acquaintance with it appeared to me of sufficient importance to demand more than a superficial notice.

The reason for the above opinion is based on the suspicion of its having caused a disease, with fatal termination, of twenty or more oxen in a Kentucky distillery in May, 1889.



On the 12th of said month I was requested to inspect the stock in question, and if possible ascertain the nature and cause of the disease, and, to facilitate matters, make a few post-mortem examinations.

I found one hundred or more oxen under one roof, all of which, with a few exceptions, were in fair condition. The building was on elevated ground, and well ventilated.

The cadavers which I expected to examine had been cremated, as had all the others which died before, it having been forgotten to give contra orders.

The general impression was that the malady was abating, both in numbers and force, as there were but three sick animals, two of which were on a fair way to recovery; these would not admit of a close examination. They walked about in their pens, eating some hay occasionally, and drinking water, but paid no attention to mixed food of still-swill and cotton seed cake meal; one even attempted to ruminate several times. The alimentary deposits were soft, and of a yellowish-red color.

The third steer, sick about thirty-six hours, showed symptoms for the worse; he wore an anxious look, would not move voluntarily, lifted and shifted his feet quite often; shivered almost continually in the muscular region of the extremities. Respiration, 100; temperature, 104°; circulation, 80. White foam dribbled from nose and mouth incessantly. He drank water greedily, but refused all nourishment; had a fit of vertigo, but did not come to a fall. Evacuations from the bowels were mushy, thoroughly mixed with blood, and turned black in fifteen to twenty minutes.

The foreman of the stable stated that the majority of the animals which died showed about the same symptoms as this one.

The first signs of their being sick was drowsiness, salivation, refusal of all liquid food, desire for clear water, and evacuation of soft, reddish manure. As the disease advanced, a dizziness would very often bring them to a fall, and when down, a tremor of the extremities was present; they then would get up, and move about again; but upon the third attack, generally remained down until they expired several hours after. The disease lasted from two to three days.

Permission to kill this steer was granted. When walking to the place of destruction, a distance of about sixty feet, the animal was attacked with such a dyspnoea that he stopped suddenly, stretched his head and neck, protruded the tongue, straddled his legs to prevent his falling, and coughed up some foam, which seemed to relieve him, so that he was able to finish his trip.

A single stroke from a broad-headed hammer felled him, after which he was depleted in butcher's manner.

The blood looked like arterial blood, and coagulated in a very short time; the subcutaneous vessels yielded a darker colored fluid. The muscles had a natural aspect. Nothing abnormal was visible on the surface of the alimentary tract. The rumen contained a considerable quantity of partially liquid food; the inner lining was softer than usual; the other three stomachs contained comparatively little food.

The first two and the larger part of the third division of the small intestines were normal. The last fourth of the ileum and the whole tract of the large in-



testines contained a bloody, mushy, almost odorless mixture. From the last fourth of the ileum to the terminus of the alimentary canal, the mucous membrane was stained with blood, which could be washed off, save in the cæcum and first half of the colon, where this sanguinous abnormality penetrated the mucosa and muscular coat to such a depth that it might be termed a bloody infiltration.

Spleen and liver normal, as were also the kidneys. Gall-bladder filled with green-colored bile of molasses consistency.

Water-bladder contained a yellowish translucent urine.

Lungs and heart were healthy, except that the bronchial tube and trachea were occupied by a considerable amount of white foam.

The brain was not damaged in the least by the death-blow, unless a few congested vessels seen in the arachnoida were the result of it. Whether it was softer than normal cannot be maintained. As there was nothing unusual in the animal's locomotion, an examination of the spinal cord was not made, there being little hope that its exposition would lead to any important disclosures.

The foreman remarked that in all the cadavers he opened he found nothing that attracted his attention, except white foam in the respiratory apparatus and bloody contents of the bowels.

He attributed the cause of this strange disease to the second consignment of cotton seed cake meal, which he was then feeding; it was coarser, of a different color, and less pleasant to the smell than the first. The cattle did not take hold of it with relish, some refused it altogether, a number of them took sick, some died, and others recovered. He informed the Superintendent of his suspicions, but the food was not changed until the death reports increased daily.

A superficial inspection of this food showed that it consisted of coarse crushed hulls, of a brown color, covered with downy fibrous substance, which at first sight looked like mold, and very likely mold was associated with it.

Whether these cattle actually succumbed to this cotton seed cake meal is an open question, still in revising Dr. E. Potts' description regarding the properties of this cake and meal, in Vol. 1. page 428 of the *Thierärztliche Encyclopædia*, edited by Dr. Koch, Vienna, I notice an intimation which will admit of such a conjecture. After giving a brief classification of the different kinds of gossypium from which the seed is obtained, he says: "Upon the extraction of the oil, these cakes are of various qualities, and not always fit for food."

Cotton seed cakes, meal, etc., are brought to market containing, besides the hard, indigestible ground hulls, a good deal of cotton fibres, and are therefore fit only for fertilizing. If utilized for food, they call forth violent disturbances in the digestive organs, and upon continuous feeding, may eventually cause death, as the cotton fibres ball together in the alimentary tract, thus producing constipation and inflammation of the bowels.

Cakes made from hulled seeds are most nutritious, digestible and palatable. The better quality (unhulled) cakes are made from the Egyptian seed, it being easily freed from fibres; it is pressed whole, and as an article of food, is much sought after in England.

Those cakes (unhulled) full of fibres are of a dark brown color; and those containing less fibres are, on the other hand, of a greenish color, but soon turn

brownish. Both these last named kinds, as a rule, contain, in addition to the hulls and fibres, other impurities, such as minute particles of iron from the presses, etc., and are often, as are all other cakes stored in damp places, impregnated with mold and other organisms, through which poisonous alkaloids (ptomaines) seem to form in the cakes to such a degree that their consumption may have a fatal effect on cattle.

The good quality of hulled cakes, the so-called American cotton seeds cakes, are of a bright yellow color; if they be of a dark color, they have either been pressed while they were too warm, stored in a damp place, or spoilt in some other way and therefore of doubtful quality. Well prepared cakes should have an agreeable odor, a nutlike sweet taste, be hard and dry. Cakes and meal made from sound hulled seeds are eaten with relish, and promote the thrift of all domestic animals used for draught or food.

To milch cows is given daily 3 lbs., sometimes as high as 5 lbs.

To draught oxen 3 to 4 lbs.

To oxen for fattening purposes as much as 6 lbs.

To sheep and swine  $\frac{1}{2}$  to 1 lb.

To horses  $\frac{1}{2}$  lbs.

Finally, the main inducement for bringing cotton seed cake into widespread use, is its cheapness."

#### DISCUSSIONS.

President Huidekoper having called Secretary Hoskins to the Chair, discussion of Dr. Salmon's paper was invited. There being no discussion of Dr. Salmon's paper, discussion of Dr. Huidekoper's paper on the Contraction of the Horse's Foot was called for.

Dr. Meyer, Sr.: The remarks I have to make on Dr. Salmon's paper are simply to say that I was very much pleased with it. But I would like to know what he has to say about Dr. Salmon's statement that these organisms are in the animal's body, and that there are also developments going on in the outer world. I would like to know how it is about the germs being developed partly in the animal's body and partly on the outside.

Dr. Salmon: I do not know that I can add very much to what I have already said. What we do not know about Texas fever germs would make a very much larger book than what we do know. I have said all we would like to say about it. We do not know anything about the life of the germ outside of the body; we have not been able to recognize it. I do not know where it grows, nor how it grows. We simply know that when a pasture is infected with these germs, the infection seems to be intensified as the season goes along, and I know that the cattle take the germs

more rapidly into their systems later in the season than earlier in the season. What form they assume and how they grow and what are the conditions necessary to their growth, or how they are taken into the system we are still in ignorance. Those are questions it will take several years to solve.

Dr. Meyer, Sr.: In respect to lame horses, I think we would do well to send them to the Chicago Sanitarium. I have seen so few lame horses here. I guess it is because the streets are so level that there is little occasion for spraining and the like.

Chairman Hoskins: If there are no further remarks on that paper we will pass to the paper of Dr. Liantard on Veterinary Jurisprudence. I hope that the question of veterinary jurisprudence has not been so thoroughly exhausted that there are no remarks on that subject from as many States as we have represented here to-day. In some of them it must be that judicial decisions have already been rendered which will add interest to the consideration of this subject.

President Huidekoper: If no one has anything to say, I would like to remark that this is a matter which should be thoroughly gone over and brought up again at the next meeting. I have had some experience myself with the Continental system which Dr. Liantard regards as better than our English system based on the words, "Soundness" and "Unsoundness." It is one that certainly is of great interest both to the purchaser and the seller.

There is one point which Dr. Liantard did not bring out, and that is the Continental system with its prohibitory vices which the law charges the seller with, unless he is specifically relieved therefrom by the written contract of the buyer, in nine or thirty days as the case may be. Then too the law assumes only to cover the hidden vices. All open troubles, spavin, ringbone, or anything of that kind which can be seen by an ordinary expert, they assume that the buyer ought to see and if he is not sufficiently expert then he should employ a proper one to make the examination for him. That allows the veterinarian to be in turn a great deal more lenient with the dealer. It allows the veterinarian to recommend the purchase of a horse with a visible blemish, which will not injure him, as in the case of a small

spavin or ringbone, which allows a horse to do a hard day's work without a lame step. It allows the sale of such an animal with the purchaser having a knowledge of that. Where an ordinary certificate uses the word sound and unsound, you would be compelled to condemn a perfectly useful horse having such a blemish. I think with a little unanimity on the part of the profession it would be comparatively easy to obtain suitable legislation looking towards a change in the system of examination. Personally, I find it entirely practicable in many examinations to carry it out by the permission of the seller and buyer. In several dealers' stables in Philadelphia where I practice, examinations are made in that way and I do not use the words soundness and unsoundness as they occur on my ordinary certificate, but I scratch them off the paper and state the blemishes of the horse and whether I consider he will be useful or otherwise. I would like to hear the subject discussed.

Dr. Atkinson: I would like to inquire of Prof. Liautard whether the Continental law that he speaks of is statutory or common law?

Dr. Liautard: They are special laws which are common laws for that purpose. I will interpolate into my paper that in regard to prohibitory vices, they are referred to, so long as the animal was warranted not being free from them.

Now, I do not know that a great deal of discussion can be had on this subject for the simple reason that it is so broad. It is an important step to ask that we should work for the establishment of laws different from those which have been in existence in courts for many years. It may seem presumptuous on my part to present the subject to you, yet at the same time what I have said is the result of many hours of thought, and I have the regret of knowing that in many cases, by rejecting the animal, under the law, we were doing a great injustice to all parties concerned, and that those horses which we were obliged to condemn under the law would be perfectly satisfactory and give good useful service to the buyer. Now, that subject seems to me of great importance. We cannot discuss it fully because there are so many points to be considered. It seems to me, as our President has suggested, that we



should not allow the paper to go by—the paper may go by, but for pity's sake, do not allow the subject to go by. It is of as much importance as the paper read by Dr. Schwarzkopff; it is a national subject belonging to veterinary science and we ought to take hold of it. I think it should be kept before the Association.

Dr. Atkinson: I do not know that I fully understand exactly what is meant. I have given the subject some thought and it seems to me that a uniform law in this direction would be difficult to obtain owing to the peculiarities of our form of government. Laws as I understand them, come from two sources; there is statutory and common law. Common law is the decisions of the courts that have been handed down from time to time and are based on the ideas of justice that obtain at one time or another, some of them coming to us away back from the time when kings had power to issue edicts. Statutory law is the enactment of the different State Legislatures and our National Congress. Enactments generally are the result of some emergency which the common law does not provide for. Unless they are the result of such an emergency the statute law is liable to fall into disuse.

Now, under our constitution, I believe it would be impossible for the National government to enact any law in relation to contracts and their enforcement between citizens of the same State. So that any uniform practice would have to be established by the statutory enactment of the respective States. As it is now, the decisions have nearly all been rendered under actions for what is known as breach of warranty, implied or expressed, implied by some statement that the seller had made to the purchaser, verbally or in writing. In proceeding under a breach of warranty it becomes necessary to establish that the warrant was expressed by the seller and was acted on in good faith by the purchaser, and that the animal was not up to the representations made. Under our State law (Wis.) and I presume it is the same in other places, the purchaser would have the right to proceed in one of two ways, upon a breach of warranty, either return the animal or thing purchased and demand full return of the purchase money, or retain it and sue for the difference between the real value and the value which he paid. Now, in applying this law, we want to make it

suit all cases. If there is special legislation that touches it, for instance if a man sold an animal without warrant, we will say a horse that was sick, that proved to be affected with glanders, under our law he would not need to establish that it was represented to be sound at the time it was purchased. A special act of our Legislature makes it unlawful to sell such an animal, and the purchaser may recover the price paid and other damages.

I do not know how uniform legislation could be had under our present State constitutions. I have ventured thus far to express my views on the subject, although they may not throw much light on the discussion.

President Huidekoper: The Chair would like to answer one of Dr. Atkinson's propositions. Fortunately in the West, most of the States have laws concerning contagious diseases. Take the illustration that he has just made of glanders. But during last spring in Philadelphia a case was brought into court of a glandered horse that had passed through the hands during the period of two years of some six different purchasers. Each one in turn had sold the animal with full knowledge that she was glandered, several of them knowing that they and their neighbors had lost horses through contact with this animal. It was decided in the Pennsylvania court this spring that there was no law in Pennsylvania that forbid the sale of a glandered animal, so that for Eastern States we need additional legislation very decidedly.

Dr. Atkinson: That covers exactly the point I had in view, that where the common law is not sufficient to meet emergencies, statutory law must be enacted. In our State it is a criminal offense to sell an animal affected with such a disease, and the seller is liable to criminal prosecution, fine and imprisonment. That is a case where the statute is in aid of the common law and supplies the deficiency. Under the common law the seller would be liable for a breach of warranty or failure of consideration of the contract.

President Huidekoper: Remarks are now in order on Dr. Schwartzkopff's paper on the Meat Inspection Law. He has presented a very important subject and I would like to hear from some of you State Inspectors on the subject. Dr. Salmon, won't

you give us something on the question of meat inspection, as you have just been doing some National meat inspection?

Dr. Salmon: If there is any light I can throw on the subject I would be happy to do so; but I hardly know what points the gentlemen are interested in. If any care to ask me any questions, I will be glad to tell them anything I know about it.

Dr. A. H. Baker: I would like to ask what is the status of the meat inspection of American cattle in England?

Dr. Salmon: I found that to be rather peculiar in certain respects. There are a large number of cattle landed at three or four different places where they have large cattle sheds and docks and suitable accommodation for the cattle, but they have but one inspector at each place where there are sometimes a thousand cattle landed in a day. The inspector stands on the dock and looks at the cattle as they come in from the ship and if he sees anything the matter with them as they pass, such cattle are run off into a pen by themselves for future inspection. That is about the end of professional inspection, although I think there is an arrangement between the inspectors and the butchers that in case any marked defects are found, they are to be reported. If there is such an arrangement, it is more or less *sub rosa*, and I do not know to what extent it can be relied upon. It struck me that the inspection made over there of our cattle by English inspectors was not very thorough, although perhaps as critical as we would care to have it made.

Of course, as you know, the Department of Agriculture has succeeded in making arrangements with the British Government by which we have placed three inspectors over there, one at London, one at Liverpool and one at Glasgow. They are there of course, only by the courtesy of the British Government; we have no right to send men there to make an inspection on British soil, but it was done by our Government because there had been a great many reports of pleuro-pneumonia being found among American cattle on the other side. Some of these reports were made in regard to cattle shipped from parts of the country where we had no evidence of there being any contagious pleuro-pneumonia, and it seemed very desirable that our Government should have these men

there to look after the matter for two reasons. First, there was a possibility that there had been an error in diagnosis. Those who have had experience with pleuro-pneumonia know how difficult it is to make a diagnosis, when you have only one of these animals, and no way of tracing the history of that animal. You may find the condition of the lungs which resembles pleuro-pneumonia, but which also resembles other diseases. We all know that pleuro-pneumonia produces a peculiar effect to the appearance of the affected lungs; but those peculiarities are also found in lungs which have received their irritation from other germs and sometimes by other agents. So that it can be hardly claimed to-day that these symptoms are always those of contagious pleuro-pneumonia. Of course, when you take those symptoms of pleuro-pneumonia and couple them with other characteristics which we generally see, then we begin to have very positive evidence of the diagnosis. At any rate, it seemed to us there might be an error in diagnosis, and on the other hand it was possible that there might be pleuro-pneumonia going abroad from our country from our cattle shipped from sections of our country where we did not know the disease existed. It was in the West before it was found, and it is just as possible it is out here somewhere as it was then, although if it had been here for any length of time we would have known it. Yet there is always a possibility, and for that reason it has seemed best to have our representatives on the other side.

It may be said that the British inspectors do not claim to have found any contagious pleuro-pneumonia among our cattle since February last, and since that great progress has been made in the eradication of the disease on this side. The fact is there is very little pleuro-pneumonia in this country. I may almost say we have had none for the last six months, and as soon as it has been found here the animals have been slaughtered and the disease eradicated. But in this country as in other countries, the disease continues to appear in certain places. One reason for its re-appearance was indicated to you in the views which I showed here this morning, that stables which have been infected were retained with the infection in them, and in some of those cases it was not until the places had been utterly destroyed, the soil dug up and thoroughly disinfected



by saturating the soil with corrosive sublimate that we have finally succeeded in getting rid of the disease. After such a treatment we have had no second outbreak. But it takes time to find these different places where the disease lurks, and it also takes time to get at all the old chronic cases, and that is why the disease still continues to reappear. We have had but very few cases in Brooklyn, so that it hardly seems we could have exported the disease.

That is about the status of the matter as it is at present. England wants our cattle for several reasons, because of its economy among others. This is an important matter to our people, and if they can be made to understand the good work which the veterinary surgeon has done for the shippers in this country, the time may come when they will fully appreciate it.

Dr. Weber: I would like to know what is the probability of our importing the disease from England to this country?

Dr. Salmon: That is putting the shoe on the other foot. England, of course, wants to avoid any importation of the disease. We hope, of course, that by showing a clean bill of health on this side, there is no danger from pleuro-pneumonia by shipping our cattle over there. England has a good deal of pleuro-pneumonia in Ireland and in Scotland. They have been working on it over there for quite a number of years without making much progress. At the last session of Parliament they secured a new law which transferred authority in cases of pleuro-pneumonia, from the local authorities to the general authority in London. Now they hope to go ahead and get the disease eradicated.

We have our quarantines against the cattle from England, and will of course maintain them until they show a clean bill of health. I do not think there is much probability of importing the disease in cattle that come through our quarantine stations, yet, there is a bare possibility that the cattle may contain the infection, although if our officials are alert it would be almost impossible for the disease to escape detection.

I find those who know most about pleuro-pneumonia are the most conservative concerning our ability to absolutely wipe out the disease. It was said to me by one of the highest officers of the British Government that if they succeeded in ridding the country

of pleuro-pneumonia in six years, or double the length of time it required in this country, they should be happy.

Dr. Baker : Do our inspectors inspect the animals before or after they are killed ?

Dr. Salmon : All American cattle landed in Great Britain are slaughtered on the docks within ten days after being landed. Our inspectors are very careful to examine so far as possible the American cattle as they go off the ship, and they have the promise of the British inspectors, that in case they find anything which they consider to be pleuro-pneumonia, it will be brought to the attention of our inspectors at once and they will be given every opportunity to examine the cases and submit their report to our Government. Our inspectors do not see the cattle killed. It is absolutely impossible for any one man, at any one of these places to see the cattle killed, there are too many of them. There is a string of slaughter houses a half a mile long, in Bedford, where they are killing cattle all the time during the greater part of the day. A man might watch two or three houses, but he could not watch them all. Probably it would take fifty men to see the organs of all the cattle slaughtered. At Bedford some of the wards are immense institutions. I was surprised to see what permanent buildings they had erected ; we haven't anything in this country to compare with it.

Dr. Baker : Another point I would like to have brought out is whether the English Government require all animals to be inspected after slaughtering, or in case of disease are they dependent upon the courtesy and honesty of the British butcher to report it.

Dr. Salmon : As I said before, their inspectors do not see the cattle slaughtered. Of course if they find things which they are unable to detect during the life of the animal they must depend on the butchers. What arrangements they have or how much they can depend upon them, I cannot say.

Dr. Liautard : Do the English and American cattle go to these same wharves.

Dr. Salmon : There are cattle from other parts of Europe there, and there might be a possibility of the American cattle mingling with cattle from Holland and possibly other parts of the country.

Dr. Baker: Under these circumstances it is possible that pleuro-pneumonia may be taken there by these Continental cattle and the trouble ascribed to the shipments from America.

Dr. Salmon: That is possible, but I do not think very likely. The great bulk of our cattle going to Great Britain are run into pens by themselves and they are handled by a class of men entirely different from those who handle Continental cattle. I do not believe there is much possibility of their being mixed. They are kept separate until slaughtered, and until slaughtered those who handle them know where the cattle come from; and I think those who handle them are rather prejudiced in our favor than against us. I do not think any mistake of the kind referred to has occurred.

Dr. Clement: I was very much interested in the paper of Dr. Schwartzkopff; having had some experience, I know that a man with his training makes him an authority such as none of us would pretend to be on the subject. Germany is far ahead of any country in the world in sanitary science. Certainly its abattoirs are far superior to anything in this country, France or England. In Berlin, I believe, he said a great number of inspectors are employed, and undoubtedly one trained in such an institution gains information which is hardly possible in this country. The abattoir system, however, is absolutely necessary, in my opinion, to a proper conduct of a system of inspection. Unless we can have abattoirs it is hardly of any use to have a system of inspection of the food-supply in our cities. The classification which he adopts, however, I do not quite understand. If I remember right, he classifies the diseased under three heads. First, he puts swine-plague, and, second tuberculosis, and others. Of the first class of diseases, he says that the carcasses should be totally destroyed. Of the second class, he says only the part affected should be destroyed. Now it seems to us that those diseases which are not directly communicable to man are less dangerous as articles of food than those diseases which are directly communicable to man; therefore I do not see why those which are classified under the first head for total destruction are placed there, while of those of the second only a part of the carcass is destroyed. If I remember right, he speaks of the classification referring to the temperature of the

animal, to a certain extent, before death. Undoubtedly a high temperature is very obnoxious, but it is certainly not as injurious, in the opinion of many of us, as would be the eating of the flesh of animals containing germs of diseases which are directly communicable to man. I would like to ask him to kindly explain again the basis of his classification of those diseases which he includes under the several heads.

Dr. Schwartzkopff: The question of Dr. Clement is correct. The diseases were classed under three heads. First, such as are prohibited by ordinary police regulation. Some they are not allowed to slaughter at all in Germany and Austria and parts of Switzerland, and I think in Italy, although I am not much acquainted with such laws. Prof. Liantard will understand that France has no such laws, neither has England or Russia.

Dr. Liantard: Yes, France has the same laws.

Dr. Schwartzkopff: Yes, all over the continent those laws prevail, with the exception of Russia and in England.

Under the second head I have classed those diseases where slaughtering is permitted, to ascertain whether the whole or part is fit for human food, to be used for industrial purposes, or to be absolutely destroyed. Some parts of the animal may be given for consumption, or may be used in the rendering-tanks, or be totally destroyed. There are three different doors which are open to the sanitarian.

As far as tuberculosis is concerned, we all know that animals in which tuberculosis is found should be destroyed, that is, from a theoretical standpoint. But we all know that cattle shipped from several sections of the country there will be found animals more or less affected with tuberculosis, some of them in such a small degree that although they show tuberculosis, otherwise the animal is in a perfect condition for food. I personally adopt the views of this country; but so far as Germany is concerned, from which I largely adopt this view, the German authority on these sanitary matters allows the use of cattle diseased with tuberculosis, for instance, if in one part of the lung. As soon as tuberculosis is shown—which is very easily recognized by the affection of the lymphatic glands and through the body, it is generally considered that the animal is unfit for food, and it is so without doubt.



Dr. Clement: I wanted to get at the basis of your classification. I quite agree with you that cattle affected with tuberculosis in a small degree are not injurious as an article of food.

Dr. Schwartzkopff: Excuse me; I should have said, of course, that the diseased parts are destroyed.

Dr. Clement: It seems to me that a little too much stress may be laid upon some of the other diseases which render the animals unfit for food. I do not think it will do any harm, for instance, to eat pork from a pig which died of hog cholera, even though the animal was very sick.

I would like to ask Dr. Schwartzkopff if diseased meat is sold in Germany, and so specified? If from an economic standpoint they do not condemn the whole animal, but pass it as diseased, and sell it to the people, who know what they are buying and take their chances?

Dr. Schwartzkopff: Dr. Clement is right. There are laws in Southern Germany which provide for a classification of the meat. In the first place, perfectly sound meat for the market; then there will be given meat, for instance, from animals with the swine-plague, which are known not to injure human beings, but which, rather from feeling that such meat is not from perfectly sound animals, persons would rather not eat. Such meat is classified and sold cheap; not under a general law, but local ordinances of the municipality, from what you would call here aldermen. (Applause.) These are simply ordinances which allow this meat to be sold to the poorer classes. In this country you will hardly like that very much. In America the citizen is a much stronger person than in most of the countries in Europe, with the possible exception, perhaps, of England. Here all classes of people want good sound meat and nothing else. It will take a long time in this country to establish such a law as it has taken a hundred years in Germany to bring about.

Dr. Williams: The two diseases of actinomykosis and tuberculosis are subjects of importance to us in Illinois. Dr. Clement has said it was impossible to condemn all these animals: Illinois has found it possible to condemn them, and has done it very successfully. We have some lively fights on hand on the subject of

actinomykosis. We probably have more animals affected with this disease than any other part of the country. We have had, for instance, in one series of cattle sheds here about one hundred cases of actinomykosis, and we had quite a little trouble right here in Chicago on that subject.

Dr. Atkinson: It occurs to me, in considering this subject, there is one feature lost sight of. It has always seemed to me that while an animal was on its four feet it was a fit subject for the veterinarian, but when hanging up by the quarters for food, it was more properly a subject for the Board of Health to deal with. I have had some experience. Five years ago I was appointed State Veterinarian of Wisconsin, and was somewhat enthusiastic, as all beginners are. Among the first cases I met was a party that had a drove of two hundred hogs nearly ready for the market, in which hog cholera had made its appearance. I happened to be visiting in the neighborhood; he heard I was coming, and he attempted to ship them. I succeeded in getting him to take them back to his farm. The old man protested that it meant ruin if he had to lose those hogs. He said he knew if he could get them into the Chicago market he could realize on them. I expected I would be sustained by the State Board of Health. The law provided that I should co-operate with them. As soon as I got home I notified the Secretary of the State Board of Health, and some six or eight months afterwards I asked him if he got my letter. He said, "Yes; we took it up at our last meeting." I says, "What of it?" "Well," he says, "there is nothing to show that hog cholera does people any harm, and we concluded it was not a matter for our Board to interfere with." Now, how far would I have been sustained had I gone on and acted in that matter? I do not believe veterinarians can act alone.

I had another experience almost similar. This subject of tuberculosis has attracted a great deal of attention. It was made the subject of discussion in a meeting of veterinarians, sanitarians and Board of Health officers held at Springfield, last fall, and the question of how far our jurisdiction would go was brought up by myself at that time as it is now. We called in the Secretary of the State Board of Health and asked him what his

opinion was. He said it was not established that they were contagious diseases. He said there was a theory advanced that they were but it was not generally accepted in the medical profession that they were. If the veterinary profession is going to place itself on record as saying that that fact is established, that they are contagious diseases—I believe there is some doubt whether tuberculosis is a disease or not—but in the other, there are some diseases transmissible from animal to animal and to mankind. This is a wide subject and any attempt at securing legislation, it seems to me, would be more properly attempted when supported by the Board of Health after we have reached that point. It may be that the veterinarian has better fields for observation, but for my own part I have always looked at the medical profession as one of the sources from which we can gather information in that direction.

Dr. Schwartzkopff: These remarks are very interesting; but I think this is one of the most profitable fields of work for the veterinarian.

As to the question of actinomycosis, as I said before, theoretically it is not contagious. Some time ago there was a dispute going on and I expressed my views, which I am sorry were contrary to the belief of most of you in this country. Personally I like to go where you go, I do not want to put myself on record as opposed to you or your ideas, but when I am forced to do so I must be candid and say I do not believe it is contagious, and I base my opinion on my own experience as well as my theoretical studies in handling cattle, in the Berlin slaughter houses. As long as you are dealing with the living animal it will always be difficult to decide some of these questions. The only way it can be done in many cases is by post-mortem, to determine whether the meat is fit for human food or not. There may be some cases in which the meat of the animals would be dangerous and in others where it is not. This is a question of importance and you can be sure that you will be compelled in the next few years to form your opinion on this matter.

Dr. Salmon: This is a question I am considerably interested in and I am glad it has come up. I only wish the Association would

make it a special subject for discussion at the next meeting. I would like to see the members come in prepared to present their views and criticize the opinions of others and thus bring out the truth as it is always brought out by a conflict of opinion. It is only by discussion and a comparison of notes and by the interchange of ideas that we finally sift the wheat from the chaff and get down to the truth about a matter. Meat inspection is a matter that it will not be many years before it will prevail in every locality in the country. It is a National question and a very important one. As a profession and as members of the National Veterinary Association we should have clear ideas upon the subject and be ready to give reasons for the belief that is within us. I think that some members of our profession have been rather hasty in arriving at conclusions. I believe the inspection should only condemn the animal in case the red flesh is affected and in case the tuberculosis is disseminated throughout the body. Some claim, that if the lung is affected the flesh of the animal is safe. Now, is that a safe conclusion for us to reach? Have all of us reached the point where we can say there is no possibility of danger in consuming the meat of an animal which has tuberculosis in the lung? If it is true that these germs circulate in the glands and in the udder, why don't they circulate in the meat that is used for human food? I say it is too early for us to say that the meat of an animal is safe for human food, because we are unable to find the germs of these diseases in the lean meat. If we find these germs in the blood why do we not find them in the red flesh? If they are in some parts they must have circulated in the different parts of the body. How do we know how far they go and how do we know that they are not in all parts of the carcass, having circulated through it?

As to the diseases which are contagious, there is a strong feeling against the use for food of animals so diseased. It is very hard to draw the line. Sometimes you have a case of acute pneumonia; you do not know the temperature, you do not have the temperature raised enough so that you can say there is any rise in temperature. Who can say that there are not poisonous elements all through the body, which may be very injurious to people partaking of the flesh.



There are a great many facts to be taken into consideration on this question of meat inspection and I hope before the next meeting our observations will be made very thorough. We have just entered on the threshold of our knowledge of contagious diseases and it is too early to come to any positive opinions, especially when those opinions run rather counter to the opinions which have heretofore prevailed.

Dr. Meyer, Sr.: In regard to actinomykosis I have been reading the slaughter house reports from Berlin and it appears that there the diseased part is thrown away and the other portion allowed to be consumed. And even in tuberculosis I believe the rule has a limit of the same description. Another theory is that where only a portion is affected, it is diseased through and through. So I guess we ought to make a distinction between that which is to be consumed and that which is not to be allowed.

Dr. Hawkins: I will state what has been done in the city of Detroit. When the Health Officer discovers a case of actinomykosis, he orders the destruction of that animal and of course that ends it right there.

Now with regard to inspection of meat. In our city, to give you an idea of what our inspection is, our present meat inspector is a cigar peddler. He knows as much about healthy and unhealthy meat as a hog does about book-keeping. In Michigan two years ago there was introduced into the Legislature a bill providing for a live stock inspector for the inspection of hogs and cattle brought into the different stock yards. The only way we have now to prevent the sale of diseased meat on our market is through the local inspector, who is appointed by the Board of Aldermen. If he is a good Democrat he stands a pretty good chance of getting in. That is the way our inspectors are appointed.

Dr. Baker: I do not know that there is much Democracy in contagious diseases in Illinois; but as regards the disposition of cases of actinomykosis here as stated by Dr. Williams, we have been able to deal with it. In Illinois the officials have acted under the advice of their veterinarians and we look upon actinomykosis as a disease which renders the animal unfit for food. In a

late issue of the *North American Review* there is an interesting article on the longevity of Americans living in the central portion of the United States and it appears that it is greater there than in any part of the world to-day. That in a great measure is due to the character of the food eaten by the inhabitants. They are more particular as to the quality of the meat and the fruit they consume and consequently they are freer from those diseases which lessen the longevity of the race.

While we have not actually found the germs of actinomykosis, though considerable microscopic work has been done here, yet we have found them in most of the internal organs, and lung, liver and intestines, quite a considerable distance from the digestive tract. There is no question in our opinion but what it is diseased meat and while I do not know positively that it does not exist in the muscles or the red flesh that is eaten as lean beef, the safest way is to guard against any possible contamination from that source by condemning it on general principles as diseased meat.

Dr. Faust: I think the Jewish people give us a fine illustration, looking at them as a race from beginning to end. Would a Jew eat a piece of meat affected with actinomykosis? (Cries of yes! yes.)

Now then, as far as tuberculosis goes, does he eat that? I think not. I think the gentleman that just spoke expressed the true sentiment that we should keep away from danger and condemn it as unfit, destroying everything that is diseased. We have plenty of good meat in this country and don't want to eat diseased meat. If we should ever come to that point when, owing to a dense population we are obliged to eat diseased meat, we can then consider how injurious it will be.

Dr. Williams: This question is of great importance and it has been difficult for me to keep still. We wish to further discuss this subject and therefore I move that the discussion be now closed, but that a committee of three be appointed by the Chair to consider the subject of actinomykosis and tuberculosis, which committee shall submit a report at the next meeting of this Association.

Dr. Clement: I would amend that motion by adding that the committee also consider the subject of meat inspection.

The motion was seconded and carried unanimously.

The Chair appointed as *Special Committee on Food Inspection* Drs. W. L. Williams, O. Schwartzkopff, A. W. Clement.

The Secretary announced the banquet at the Palmer House at 8 o'clock this evening.

Secretary Hoskins: I move you, Mr. President, that we extend a vote of thanks to the Western Local Committee for the preparations they have made and for the successful way in which they have carried out the details for this meeting.

Seconded. Carried unanimously.

I also move that a vote of thanks be extended to the retiring officers of 1889 and 1890, which we neglected to do on the retirement of our President, who gave us such very efficient service during the last year and who contributed so largely to the success of this meeting, the most successful we have ever held. 109 members have been in the room at one time.

Dr. Atkinson: I move to amend by extending a cordial vote of thanks to all the retiring officers, as well as those who have been re-elected.

Seconded. Carried unanimously.

Dr. Adair: I move you that a vote of thanks be tendered to Dr. Salmon for the very able manner in which he presented his paper and the instructive way in which he illustrated his ideas by the use of a lantern.

A Member: I move you that we also include a vote of thanks not only to Dr. Salmon but to Dr. Liautard and Dr. Huidekoper and Dr. Schwartzkopff and Dr. Meyer and Dr. Berns, or in other words, all those who have instructed and entertained us by their very able papers.

Seconded. Carried unanimously.

On motion duly seconded, the meeting adjourned sine die.

#### THE BANQUET.

The banquet of the United States Veterinary Medical Association was held on the evening of the 17th, at the Palmer House. At 8.30 P. M. the guests gathered around a beautifully set table, laden with beautiful beds of flowers and running vines of ever-

greens, and led on by their genial Toast Master, Dr. C. B. Michener, of New York City, did ample justice to the many delicacies placed before them. After coffee and cigars had been served, letters of regret were read from Dr. Wickersham, and President John G. Shortall, of the Illinois Humane Society, followed by many pleasant and telling remarks from those assigned places on the toast list. "The union and fraternal relations created between the East and West," were fittingly referred to by Drs. Hoskins and Barker; "The profession and its power and worth" by Dr. Lyford; "The Colleges, their growth and early history, their past and present, and their outlook of the future" were suitably referred to by Professors Liautard and Withers. "The aid rendered the profession by journalism" was pungently and sweetly dwelt upon by Prof. Huidekoper. "Veterinary Sanitary Work and National Veterinary Work, and the part played by veterinarians throughout our whole land, in all the places assigned them," were commented upon and highly eulogized by Drs. Paquin and Salmon. "The place, power, influence and good work achieved by State Veterinary Associations" was thoroughly treated by Dr. Tait Butler, and his concluding remarks embraced a beautiful tribute to the future of our National Association. "The little good achieved, the great dangers involved in improper legislation for veterinarians in their respective States" was most thoroughly and justly commented upon by Dr. Atkinson. "The needs and hopes, the high appreciation by the majority of the qualified veterinarians of the Army of the work already done on their behalf," was fittingly referred to by Dr. D. Lemay. "Agriculture in its broad importance to the world, and to our Nation," with an object lesson from the good things of the table, were ably alluded to by Prof. Perian, who closed his remarks with suitable allusions to the relation of veterinarians and agriculture; after which a jolly song by Dr. Griffin and the 2 A. M. chorus of the "Kiamensi" quartet closed the grandest meeting the Association ever held.